PSION
9500 Series
Communications Server Software

User Manual

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ISO 9001 Certified
Quality Management System

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1.1 About this Manual

This manual contains information on the installation, basic operation, and configuration of the Psion Communications Server.

Chapter 1: Introduction
an overview of this manual.

Chapter 2: Administering The Communications Server
describes how to open the browser interface, access the desktop, start and stop the Communications Server software.

Chapter 3: 3274/Telnet Host Configuration
describes the 3274/Telnet-specific settings.

Chapter 4: 3274/SNA Host Configuration
describes the 3274/SNA-specific settings.

Chapter 5: 5250/Telnet Host Configuration
describes the 5250/Telnet-specific settings.

Chapter 6: 5250/SNA Host Configuration
describes the 5250/SNA-specific settings.

Chapter 7: ANSI/Telnet Host Configuration
describes the ANSI/Telnet-specific settings.

Chapter 8: 9010/Telnet Host Configuration
describes the 9010/Telnet-specific settings.

Chapter 9: 2392/Telnet Host Configuration
describes the 2392/Telnet-specific settings.

Chapter 10: RF Modem/Telnet Host Configuration
describes the RF Modem/Telnet-specific settings.

Chapter 11: HTML Host Configuration
describes the HTML-specific settings.

Chapter 12: Remote Socket Emulation Host Configuration
describes the remote sockets-specific settings.

Chapter 13: Base Station Configuration
describes the narrow band base station-specific settings.

Chapter 14: RRM Groups Configuration
describes the RRM groups-specific settings.

Chapter 15: Radio Link Features Configuration
describes the radio link-specific settings.

Chapter 16: 802.IQ v1 and v2 Features Configuration
describes the 802.IQ-specific settings.

Chapter 17: Redundancy Configuration
describes how to configure Communications server redundancy settings.

Chapter 18: SNA Protocol Configuration
describes the SNA-specific setting.

Chapter 19: System Configuration
describes the user, SNMP, serial number, and authentication settings.

Chapter 20: Miscellaneous Commands Configuration
describes the commands that import, export, and validate the database, as well as the restart command.

Chapter 21: Setting Terminal Numbers on the General Host Options Screen
explains how the *Terminal Range* parameter on the *Host General Options* screen is calculated.

1.2 Communications Server Versions

This manual describes the features of the following:

- S900 Communications Server Software
- S900 Lite Communications Server Software
- 9510 Communications Server Software

S900 Communications Server Software (Part number: 1070066)
Communications Server software that runs on a 9500 Network Controller or on a workstation or other server.

S900 Lite Communications Server Software (Part number: 1070066)
Demonstration version of the S()) Communications Server Software. Limited to: 16 hosts, 32 bases, 5 terminals.

9510 Communications Server Software (Part number: 1099034)
Communications Server software that runs on a 9500 Network Controller, a 9510 Network Controller, a Windows workstation, or a Windows server. For a list of devices that support this software see the 9500 Series Communications Server Installation Guide on IngenuityWorking.

1.3 Supported Emulations and Protocols

Pion Emulation	Use this Emulation for these Terminals	TCP/IP Protocol	SNA Protocol
2392		yes	
3274	3277, 3278-2, 3278-2-E	yes	yes
5250	5251-11, 5555-B01	yes	yes
ANSI		yes	
9010/TESS		yes	
RF Modem		yes	
HTML		yes	
Remote sockets		yes	

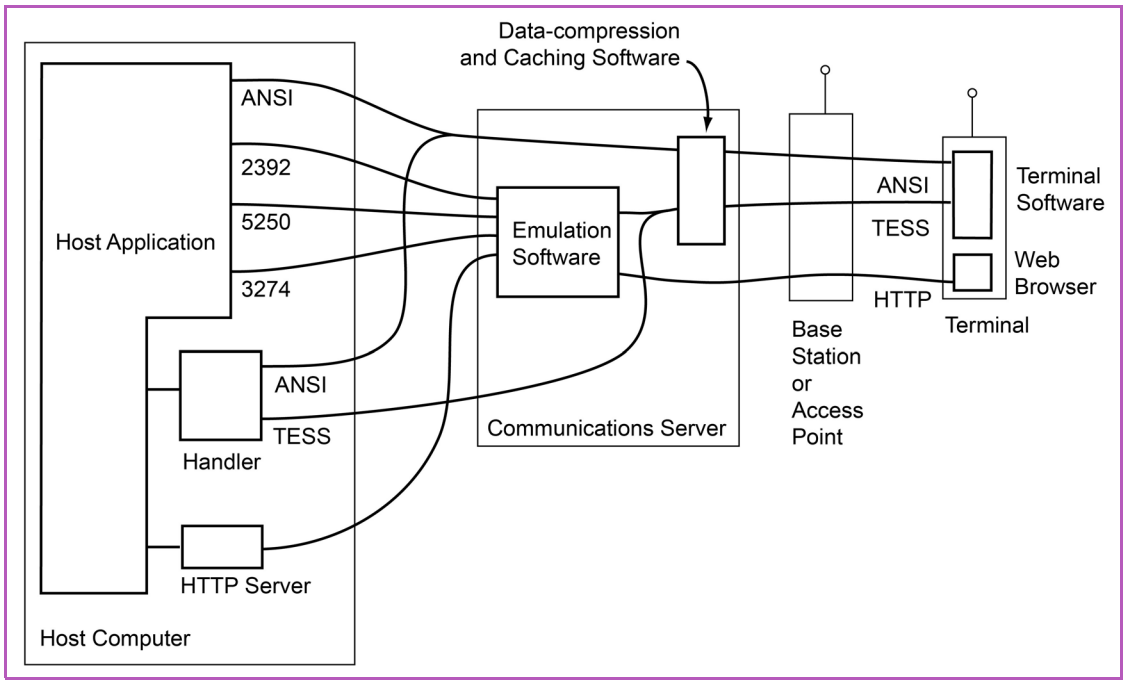
1.4 Text Conventions

Note: Notes highlight additional helpful information.

Important: ***These statements provide particularly important instructions or additional information that is critical to the operation of the equipment.***

Warning: ***These statements provide critical information that may prevent physical injury, equipment damage or data loss.***

1.5 Emulations and Datastreams



The Communications Server performs emulation conversion: the translation of data between the emulation of the host computer and the emulation used by Psion devices.

The data that is sent from a host computer to a terminal, and the data which is returned to the host from the terminal, is called a datastream.

Legacy Psion devices can accept only two types of datastream: TESS and ANSI. TESS (TEklogix Screen Subsystem) is the native emulation used by the original Teklogix terminals. TESS features such as page saving, passthru printing, and TSF/O are available. ANSI emulation is a standard type of datastream used by wired VT-type terminals; these terminals are specified by the American National Standards Institute.

Some Psion mobile devices can accept HTML datastreams for display by a browser.

Other types of supported datastream provided by the host must be converted into TESS or HTML datastreams by the Communications Server.

The emulation software on the Communications Server can accept IBM-5250, IBM-3270, HP2392, and HTML datastreams from host computers, and can convert them to and from TESS. The Communications Server caches and compresses information when creating TESS datastreams to optimize performance. This is most useful when transmitting across low bandwidth connections using narrow band radios.

The emulation software can also convert IBM-5250 and IBM-3270 datastreams to HTML datastreams, so that they may be viewed through a web browser on the mobile device. The Communications Server does not cache or compress HTML datastreams.

ANSI datastreams from host computers are not converted by the Communications Server before being sent to the mobile devices. The Communications Server can, however, cache and compress ANSI datastreams to conserve bandwidth on a narrow band radio network.

Some hosts may have Psion handler or SDK software. This software runs on the host and communicates directly with the host applications. Handlers and SDKs provide TESS datastreams which are compatible with Psion mobile devices.

1.6 Number of Connections

	S900, SW9500, and SW9510	S900L, SW9500L, and SW9510L
Maximum number of mobile devices	3840	50
Maximum number of base stations	254	254
Maximum number of hosts	16	16

2 ADMINISTERING THE COMMUNICATIONS SERVER

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2.1 Accessing the Communications Server Browser Interface

The Communications Server is configured through a browser interface.

Connecting locally

Use the following:

http://localhost:8008/

Connecting remotely

Use the following:

http://<IP address>:8008/

Where: <IP address> is the IP address of the computer running the Communications Server.

2.2 Accessing Windows Desktop

The Communications Server Software runs as a service under Windows.

The Communications Server Software automatically starts running when the computer starts or restarts.

Connecting remotely

If Remote Desktop access is enabled on the computer where Communications Server is installed you can connect to it remotely.

2.2.1 Stopping the Communications Server

To stop the Communications Server Software do the following:

1. In *Control Panel* select **Services** from the *Administrative Tools* menu.
2. Select **CommServer Watchdog**.
3. Select **Stop**.

2.2.2 Restarting the Communications Server

To restart the Communications Server Software without restarting the hardware do the following:

1. In *Control Panel* select **Services** from the *Administrative Tools* menu.
2. Select **CommServer Watchdog**.
3. Select **Restart**.

2.2.3 Reading Event Log Entries

The Communications Server logs events that can be viewed with the Windows Event Viewer. The following events are logged:

- The watchdog task is started.
- The watchdog restarts another task from crash or exit, or from checkpoint failure or timeout.
- The user manually starts, terminates, or restarts a process (through the watchdog).
- There is a change of redundancy status for the Communications Server: secondary to primary.
- The Communications Server starts up as primary, or secondary.

View the logged events

1. In *Control Panel*, select **Event Viewer** from the *Administrative Tools* menu.
2. Select **Application** events.
3. To view more information on a selected event, double-click the entry for the event.

2.3 Accessing the Debug Console

The Communications Server provides a text mode debug console. By default no username is needed to open this console; however, the Communications Server may be configured to require a username and password. For information on setting a username and password see User Screen on page 149. To make the username and password required see Enable Telnet User Authentication on page 149.

Connecting locally

Use the following:

Telnet://localhost 9523

Connecting remotely

Use the following:

Telnet://<IP address> 9523

Where: <IP address> is the IP address of the computer running the Communications Server.

Using the debug console

You should only use this console with the help of Psion support staff.

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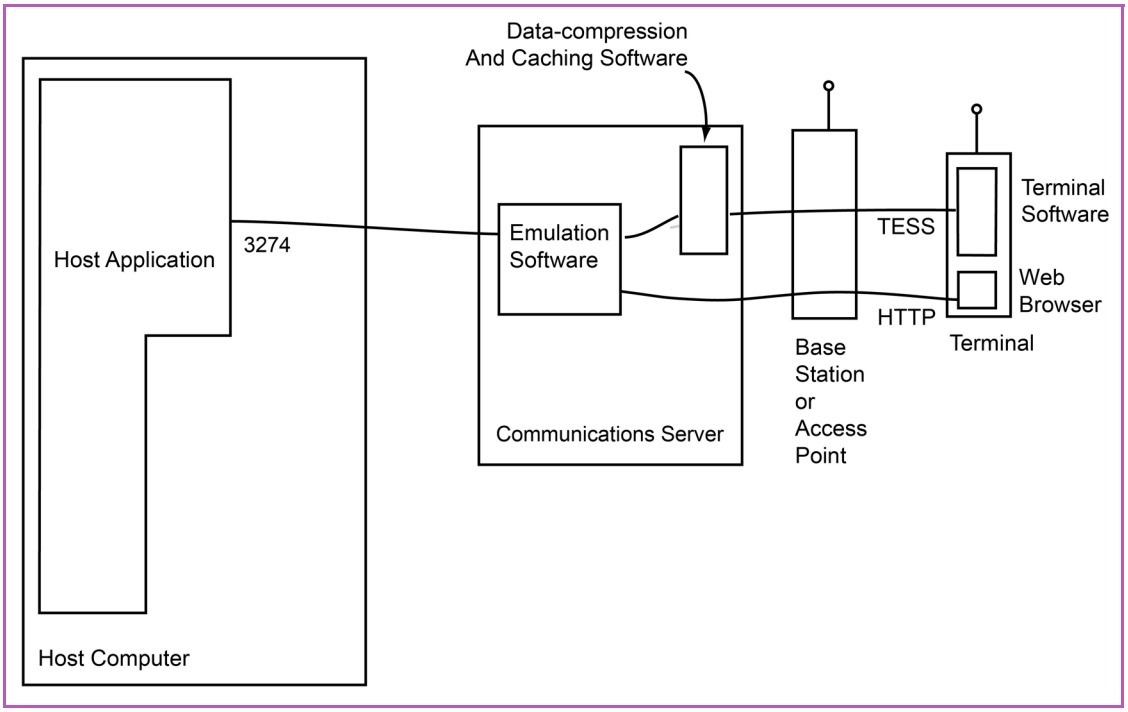
3.1 Overview

The Communications Server can emulate an IBM 3274 controller connected to a number of IBM terminals. The emulation software inside the Communications Server converts the 3274 data transparently to and from TESS or HTTP data which is then sent to and from the Psion devices. The connection between the Communications Server and its base stations, access points, and devices is transparent to the IBM host.



3.2 General Host Options Screen

Field	Description
Name	The unique name of the host. Default: Unnamed Host
Enabled	When selected the host task is started when the Communications Server software starts.
Emulation and protocol	Emulation and protocol combination for this host. Select: **3274/Telnet**
Terminal range	Terminal number range that communicates with this host. Range: 1 to 3840. For S900L, SW9500L, and SW9510L range is 1 to 50. Default: 1 to 32 For information on selecting the terminal range see Chapter 21: "Setting Terminal Numbers on the General Host Options Screen"

3.3 3274 Emulation Options Screen

3.3.1 3274 Options

Field	Description
Is Host Fujitsu	When selected the Communications Server sends data in Fujitsu format. The standard IBM formatting codes (for start of field, setting buffers, etc.) are replaced by the codes used by Fujitsu host computers. Default: Not selected.
Use International EBCDIC	When selected the Communications Server uses the international EBCDIC character set, the positions of the **!** and **]** characters are swopped. Default: Not selected.
Allow null character in fixed field	When selected, empty fields show video attributes properly when using 3274 emulation. Default: Not selected.
Treat EraseWrite NOP as Write NOP	When selected, during PASSTHRU printing of multiple screens, buffered print data is not erased. Default: Selected.
Terminal Protocol	The protocol used for the connection between the mobile devices and the Communications Server. Options are: **TESS/BCM**: This uses the Communications Server data caching, and page saving, features. **HTML/HTTP**: This uses the Communication Server HTTP server. The browser on the mobile devices must connect to port 80 on the Communications Server. Default: **TESS/BCM**

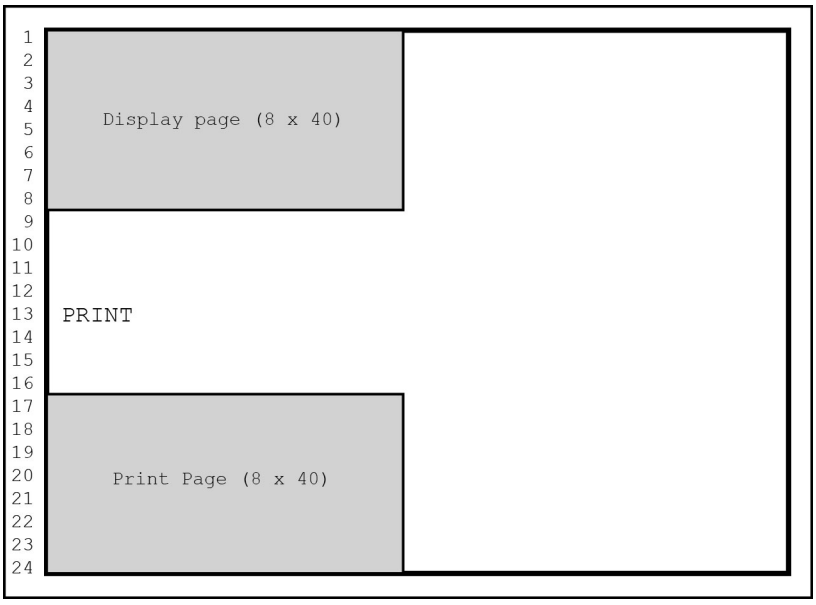
3.3.2 TESS Options

Field	Description
Alarm	When selected, mobile devices beep when the word **ALARM** appears on the application screen, in the location specified by the *Command Region* setting. The word **ALARM** should be a display-only field. *Command Region* must also be set. Default: Not selected. For more information see Command Region on page 20.
Clear	When selected, the Communications Server creates an empty entry field for an entry field that is filled with spaces. Default: Not selected.

Field	Description

Passthru	When selected, the Communications Server allows the host to send data directly to the serial port of the mobile device. This is commonly used for printing.
	Preparing Host Screens for Pass-Through:
	On the screen to be sent through the mobile device serial port, the word **PASSTHRU** has to appear on the first line, starting in the second column. The actual data to be sent to the mobile device may start anywhere below the first line.
	Attributes occupy a position in the screen buffer. An attribute placed between column 2 and the end of the word **PASSTHRU** will push all following characters one position to the right. Therefore, any required attributes should occupy column 1 of the first line (just preceding the word **PASSTHRU**).
	For example:
	`column: 1 2 3 4 5 6 7 8 9`
	`line 1: @ P A S S T H R U @`
	`line 2: @ P A R T :  1 2 3 4 5`
	where @ is an attribute.
	When the Communications Server is finished sending the data to the printer attached to the mobile device, it sends a packet containing only a Record Separator (0x1e) character to the host. The host must wait for this packet before sending any more screens (including other PASSTHRU screens) to the mobile device.
	Refer to the user manual for the mobile device for information about setting parameters on the mobile device for pass-through.
	Default: Not selected.

Procedures	Legacy setting. The last device to support this is the 7030. When selected, the Communications Server can send TESS procedures to the mobile devices. A TESS procedure is a group of TESS commands that can be executed by the TESS execute procedure command. Default: Not selected.
Local	Legacy setting. The last device to support this is the 7030. When selected, the Communications Server can provide pages to be loaded as local TESS procedures in the mobile devices. The local procedures are selected from a menu on the mobile device. The mobile device can perform these procedures when it is offline. Later when the mobile device is online, it sends the results of these functions to the host. *Procedures* must also be selected. Default: Not selected.
TSF/O	When selected, the Communications Server uses Psion Teklogix Screen-Formatter/Optimizer software (TSF/O). Default: Not selected.

Field	Description
Host Print	When selected, an application can send data to the display on the mobile device as well as to its attached printer. The text that is passed to the printer is formatted into a 24 x 80 application screen. If the host can initiate the print operation, the text is printed. The Communications Server identifies the additional text as a print page by the presence of the string **PRINT** beginning in the 2nd column of line 13 on the 24 x 80 screen. **PRINT** should be defined as display-only text. The print page is positioned below the display page of the mobile device (see the following diagram). The size of the print page is always the same as the display page of the mobile device (assuming that in the mobile device configuration, the page length is less than 12 lines). When *Host Print* is enabled, the Communications Server passes the print page to the mobile device after receiving the application screen from the host.  Unlike with the *Passthru* option, when using *Host Print* no escape commands can be sent to the printer. Support for printing must be enabled on the mobile device; refer to the appropriate user manual for the mobile device for more information Default: Not selected.
Remote Print	When enabled, the Communications Server sends the print page to a mobile device whenever the mobile device requests it (by sending the F17 function key from the mobile device, or the **PRINT** key on older mobile devices). The Communications Server sends the function response back to the host. Support for printing must be enabled on the mobile device; refer to the appropriate user manual for the mobile device for more information. Default: Not selected.

Field	Description
Pages	The number of host screens (or pages) stored on the mobile device. The Communications Server maintains an image of each page stored on the mobile device. After receiving an application screen, the Communications Server tries to match the screen with a stored page. If a similar page is already in the mobile device memory, the Communications Server instructs the mobile device to re-display its copy of the page; only the necessary changes are sent from the Communications Server. If no match is found, the complete page is sent to the mobile device. There is a corresponding parameter on the mobile device itself, and the actual number of saved pages is the smaller of the two values. A value of 1 (one) disables this feature. Values: 1 to 79 Default: 8
Transmit Line	When enabled, all modified data on the mobile device is automatically transmitted when the operator enters data into an entry field on or above this line. The value in this text box specifies the line on the screen which is designated as the transmit line. The last entry field on or above the transmit line on the screen is identified as the field which will cause all modified data to be sent to the host. Any entry fields that exist on lines below the transmit line will not cause the screen to be transmitted. A value of 0 (zero) disables this feature. A value of 24 causes the last entry field on each application screen to be defined as transmit-upon-entry. Values: 0 to 24 Default: 0
AIAG	The decimal value of the special character (ASCII) used to tag a field to use AIAG mode. When barcode data is entered on a mobile device, the mobile device searches for AIAG fields on the current page. These fields can accept the special barcode data. The data preloaded into the AIAG field by the application program determines whether a barcode is accepted. The format of the preloaded data is: <mode><AIAG prefix> The application program distinguishes an entry field as AIAG by preceding the entry field with this special AIAG character. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0 For the AIAG mode character table see AIAG Mode Values on page 20.

Field	Description
Visible Match Character	The decimal value of the special character (ASCII) used to tag a field to use visible match mode. With field matching, the host computer preloads data into an entry field. Now the mobile device operator can make an entry that matches this preloaded data. For visible match fields, the preloaded data is displayed in the entry field on the mobile device. The application program distinguishes an entry field as a match field by preceding it with a special character. The special character is entered as the decimal character code for one of the first 127 ASCII characters. For example, assume that the **>** character (ASCII decimal character code 62) is defined for visible match fields. This character must immediately precede the entry field: **Part #>_____** The field: **Part #>** includes the character **>** and is followed by the part number entry field on the screen. If any other character was chosen as the last character of the text, the entry field would not be a match field. The preloaded data sent to a mobile device may consist of the exact characters, special match characters or a combination of the two. For example, suppose you wish to preload an entry field with a part number. If the exact part number is known, you may preload the field with that part number. If more flexibility is required, and part numbers always begin with two alphabetic characters followed by a hyphen character and four digits, then the match string for the field could be: **&&-####**. If an entry is different from the preloaded data, the entry is displayed, the mobile device beeps and the cursor is in the first position of the match field. Now either another entry in the match field can be made, or the cursor can be moved to a new field. When an entry (even if it does not match the host preloaded data) is made in a match field, this entry is sent to the host as part of the modified data from the mobile device during the next transmission. A value of 0 (zero) disables this match field feature. Values: 0 to 255 Default: 0 For the Psion match characters see Match Characters on page 20.
Hidden Match Character	The decimal value of the special character (ASCII) used to tag a field to use hidden match mode. A special character is used to mark Hidden Match fields in a TESS screen. This character precedes the field contents of the Hidden Match field. In hidden match fields, as opposed to visible match fields, the preloaded entry is not displayed in the entry field on the mobile device). A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0 For the Psion match characters see Match Characters on page 20.

Field	Description
Serial I/O	The decimal value of the special character (ASCII) used to tag a field to use serial I/O mode. Serial I/O fields are special entry and fixed fields that accept input from, and output to, a serial port. The application program distinguishes this field as Serial I/O by preceding the field with a special character. If this character precedes a fixed field, the data is sent to the serial port of the mobile device. If it precedes an entry field, the field accepts data from the serial port of the mobile device. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0
Print Line	The starting line number of the print page on the application screen. A value of 1 (one) causes the display page to be printed. A value of 0 (zero) disables this feature. Values: 0 to 24 Default: 0
Print Form Length	The printer form length, in lines. Values: 0 to 24 Default: 0
Barcode	The decimal value of the special character (ASCII) used to tag a field to use barcode only mode. Barcode-input-only fields are special entry fields that only accept input from a barcode reader. The application program distinguishes an entry field as barcode-input-only by preceding the field with a special character. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0
Entry Line	The number of the first line displayed if there is no entry field above this line on the screen and if an entry field is at or below this line. The Entry Line parameter allows an automatic offset within the host screen. Normally, Psion mobile devices only display the upper left corner of the application screen because of their smaller display size. Values: 0 to 24 Default: 0
Field Overhead	The maximum number of characters allowed between two fixed fields which still allows the Communications Server to join them into one field. Sometimes the Communications Server will join two adjacent fixed fields and then send them as one field. This reduces the overhead on the radio link. For example, if two fields were 4 characters apart and this parameter was 5, then these fields would be joined into one. This feature affects fields with the **Normal** display attribute only. Values: 0 to 80 Default: 5

Field	Description
Command Region	These two pairs of text boxes define a region of the host screen which the Communications Server examines for the presence of reserved commands. The first text box of each pair contains the row number; the second contains the column number. These four numbers represent the row and column addresses of the upper left corner and the lower right corner of the command region. To define the last two lines of the host screen as the command region, for example, enter **23, 1 - 24, 80** The only commands supported in the command region are *ALARM* and *FONT*: • When the word **ALARM** is placed anywhere within the command region, the Communications Server sends a TESS beep command to the mobile device. • When the word **FONT** is placed anywhere within the command region, and followed by a number (the font code), the Communications Server sends the appropriate TESS Change Font command to the mobile device. For font codes see Font Code List for Open TekTerm on IngenuityWorking. Font codes are only required for versions of OTT before version D. Rows: 0to 24 Columns: 0to 80 Default: 0, 0 - 0, 0

AIAG Mode Values

The mode character is derived by starting with the decimal value 48—ASCII character 0 (zero)—and adding the appropriate value from the table below.

Code	Description
1	Prevent the AIAG prefix from being displayed.
2	Prevent the AIAG prefix from being sent to the host.
4	Cause a transmission to the host when all AIAG fields with this mode set are filled. The transmission is sent by a Function 0 (F0) code.
8	Allow overwriting of previously entered data.
16	Start the search for a matching AIAG field at the current cursor position. Otherwise, the cursor starts at the top of the page.

For example, the @ symbol is used to apply the cursor matching function, since adding 16 to 48 results in decimal value 64, which is the ASCII value for the character @.

Match Characters

Match Character	Use
#	Match a number
&	Match a letter (either case)
^	Match an upper case letter
_	Match a lower case letter
|	Match an alphanumeric character
"	Match a letter, number or space
?	Match a punctuation character
'	Match any character

Match Character	Use
:	Match all character positions in the field with the preceding character
;	Match any remaining characters, but not necessarily the remainder of the field, with the preceding character

3.3.3 HTML/HTTP Options

Field	Description
Foreground Colour	This is the foreground colour for the text that the Communications Server HTTP server sends to mobile devices connecting via HTTP. The choices are the 16 predefined HTML colour names. Values: Aqua, Black, Blue, Fuchsia, Gray, Green, Lime, Maroon, Navy, Olive, Purple, Red, Silver, Teal, White, Yellow Default: Black
Background Colour	This is the background colour, the colour of the HTML page, that the Communications Server HTTP server sends to mobile devices connecting via HTTP. The choices are the 16 predefined HTML colour names. Values: Aqua, Black, Blue, Fuchsia, Gray, Green, Lime, Maroon, Navy, Olive, Purple, Red, Silver, Teal, White, Yellow Default: Silver
User Data Font Size	This is the value for the HTML font size attribute that is applied to user data on the browser screen. Values: 1, 2, 3, 4, 5, 6, 7 Default: 3
Function Key Font Size	This is the size of the font that is used on the function key buttons on the browser screen. Values: 4pt, 6pt, 8pt, 10pt, 12pt, 14pt Default: 8pt
TSF/O	When selected the Communications Server uses Psion Teklogix Screen-Formatter/Optimizer software (TSF/O). Default: Selected.

3.4 3274 Telnet Protocol Options Screen

Field	Description
Terminal Type	The type of terminal to be emulated by the Communications Server. Values: IBM-2378-2, IBM-3278-2-E Default: IBM-2378-2
Host Port	The port number on the host for this connection. Values: 1 to 32767 Default: 23
Maximum Sessions per Terminal	The maximum number of Telnet connections that can originate from each mobile device. Values: 1 to 127 Default: 4

Field	Description
First Local Terminal Port	The port number from which the Communications Server makes a Telnet connection for the first terminal. Additional Telnet sessions are assigned higher port numbers. Values: 1 to 32767 Default: 10000
Local IP Address to Bind	The IP address of the Communications Server interface that connects to this host. It is used with the local port numbers to create a unique socket for each mobile device session. Default: 0.0.0.0
First Terminal Listen Port	The lowest port number on which the Communications Server listens for Telnet connections initiated by the host. When set to 0 (zero) this option is disabled. Values: 0 to 32767 Default: 0
Actively Negotiate with Host	When selected, the Communications Server performs advanced negotiations with the host during Telnet connection. Default: Not selected.
Configure LU names	When selected, the Communications Server requests LU names when initiating the Telnet connection with this 3274 host. Terminal names can be configured on the *3274 Terminal Naming* screen. Default: Not selected. For more information see Section 3.4.1 3274 Telnet Terminal Naming Screen on page 23.
LU Name Prefix	The LU prefix to be added to terminal names when *Configure LU names* is set. This prefix can be up to five alphanumeric characters. Default: None.
Send IAC Interrupt Process as a System Request	When selected, the Communications Server sends the IAC Interrupt Process request to the host as a 3274 System Request. Default: Not selected.
Send IAC Break as a Attention Key	When selected, the Communications Server sends the IAC Break request to the host as a 3274 Attention Key. Default: Not selected.
Auto-telnet/login Enable	When enabled, the host connection is automatically selected by the *Auto-telnet Host* parameter. When disabled, Telnet sessions from the mobile devices must be manually initiated. Values: DISABLE, AUTO-TELNET Default: DISABLE
Auto-telnet Host	The name or the IP address of the host to which auto-Telnet requests are directed. Any host name which can be used at the **TCP>** prompt on the mobile device may be used here. Default: None. **Note:** The host name must be resolvable by the Communications Server: The Communications Server must be able to obtain an IP address for it. For example, the host name may correspond to an entry in the Communications Server host table, or the Communications Server may be able to query a domain name server.

Field	Description
Auto-telnet Without User Action	When selected, the Communications Server attempts to connect to the host as soon as a mobile device initializes, and it attempts to reconnect if the Telnet session closes. Default: Selected.

3.4.1 3274 Telnet Terminal Naming Screen

This screen opens when Configure LU names is clicked on the 3274 Telnet Protocol Options Screen.

Field	Description
Terminal number	The number of the terminal which has the name in *Terminal name*. Values: 1 to <number of configured terminals> Default: 1
Terminal name	An LU name for the terminal. This name can contain no more than 10 alphanumeric characters. If no terminal name is specified here for a terminal, the Communications Server appends the terminal number (as five digits, with leading zeros if necessary) to the LU Prefix to create the full LU terminal name. Values: 1 to 10 characters. Default: None.

Buttons

Button	Description
Show/Set	Displays the LU name associated with the terminal number. If you have just entered a terminal number and LU name, press this button to add the terminal number and LU name to the list of configured terminals.
Delete	Deletes the currently-displayed terminal number and LU name from the list.
OK	Saves changes to the database. When it is pressed, the Communications Server displays a confirmation screen. Press **OK** in this screen to save the changes and exit to the 3274 Telnet Protocol Options Screen.
Validate	Validates, with the option to save, the changes to the Communications Server database. On the *Validation Results* screen, after reviewing any error messages, you can click one of the following: • **Cancel**: Returns to the *3274 Telnet Terminal Naming* Screen. • **Commit**: Commits the entire database and returns to the *Configuration Main Menu* screen. • **Undo**: Discards all database changes since the last database commit, and returns to the *Configuration Main Menu* screen.
Show Terminals	Displays the list of currently-configured terminal names.

3.5 3274 Function Key Mappings Screen

Use the function key list boxes to select a code that is sent to the host when the corresponding function key is pressed on the mobile device.

The 3274 emulator converts the mobile device function keys to Attention Identifier (AID) characters, as shown here:

Selected code	AID Character
ENTER	**<Enter>** key
F1 to F24	Program Function keys **<PF1>** to **<PF24>**
PA1	**<PA1>** Program Access key
PA2	**<PA2>** (CNCL) Program Access key
PA3	**<PA3>** Program Access key
CLEAR	**<PA4>** (Clear) Program Access key
RESET	**<Reset>** key
SESS	Opens a new Telnet session
SYSREQ	**<SysRq>** key
U	**<Test>** key

*Note: The **Enter** key on the mobile device only triggers a transmission to the host if the mobile device is configured to operate the **Enter** key as **function 0** (**F0**). Consult the user manual for the mobile device for more information.*

3.6 Typical Host Configuration

3.6.1 Line Description

Parameter		
Line description	LIND	ENETLINE
Option		*BASIC
Category of line		*ELAN
Resource name	RSRCNAME	LIN021
Online at IPL	ONLINE	*YES
Vary on wait	VRYWAIT	*NOWAIT
Network controller		RFCTRLENET
Local adapter address	ADPTADR	08005AB7C3FD
Exchange identifier	EXCHID	05629A5A
Ethernet standard		*ALL
Maximum controllers	MAXCTL	40
Error threshold level		*OFF
Text		
Option		*APPN
Category of line		*ELAN
Link speed		10M
Cost/connect time		0

Parameter	
Cost/byte	0
Security for line	*NONSECURE
Propagation delay	*LAN
User-defined 1	128
User-defined 2	128
User-defined 2	128
Autocreate controller	*NO

Source Service Access Points

SSAP	Maximum Frame	Type
AA	1496	*NONSNA

3.6.2 Controller Description

Parameter		
Controller description	CTRD	RFCTRLENET
Option		*BASIC
Category of controller		*NET
Attached line		ENETLINE
Online at IPL	ONLINE	*YES
Text		*BLANK

3.6.3 TCP/IP Link

Parameter		
Line description	DEVD	ENETLINE
Internet address		50.0.1.1
Link type		*ELAN
Auto start link		*YES

4 3274/SNA HOST CONFIGURATION

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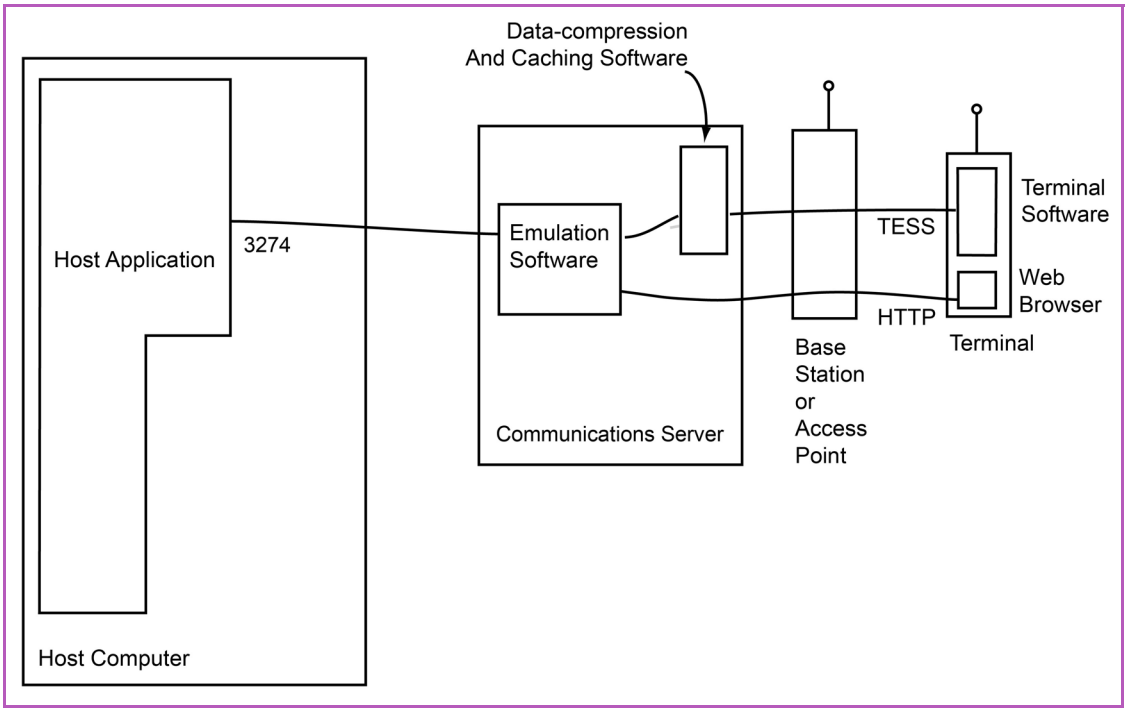
4.1 Overview

The Communications Server can emulate an IBM 3274 controller connected to a number of IBM terminals. The emulation software inside the Communications Server converts the 3274 data transparently to and from TESS or HTTP data which is then sent to and from the devices. The connection between the Communications Server and its base stations, access points, and devices is transparent to the IBM host.



Warning: ***When you are using the SNA protocol, IBM PCOMM software must be installed on the Communications Server.***

4.2 General Host Options Screen

Field	Description
Name	The unique name of the host. Default: Unnamed Host
Enabled	When selected the host task is started when the Communications Server software starts.
Emulation and protocol	Emulation and protocol combination for this host. Select: **3274/SNA**
Terminal range	Terminal number range that communicates with this host. Range: 1 to 3840. For S900L, SW9500L, and SW9510L range is 1 to 50. Default: 1 to 32 For information on selecting the terminal range see Chapter 21: "Setting Terminal Numbers on the General Host Options Screen"

4.3 3274 Emulation Options Screen

4.3.1 3274 Options

Field	Description
Is Host Fujitsu	When selected the Communications Server sends data in Fujitsu format. The standard IBM formatting codes (for start of field, setting buffers, etc.) are replaced by the codes used by Fujitsu host computers. Default: Not selected.
Use International EBCDIC	When selected the Communications Server uses the international EBCDIC character set, the positions of the **!** and **]** characters are swopped. Default: Not selected.
Allow null character in fixed field	When selected, empty fields show video attributes properly when using 3274 emulation. Default: Not selected.
Treat EraseWrite NOP as Write NOP	When selected, during PASSTHRU printing of multiple screens, buffered print data is not erased. Default: Selected.
Terminal Protocol	The protocol used for the connection between the mobile devices and the Communications Server. Options are: **TESS/BCM**: This uses the Communications Server data caching, and page saving, features. **HTML/HTTP**: This uses the Communication Server HTTP server. The browser on the mobile devices must connect to port 80 on the Communications Server. Default: **TESS/BCM**

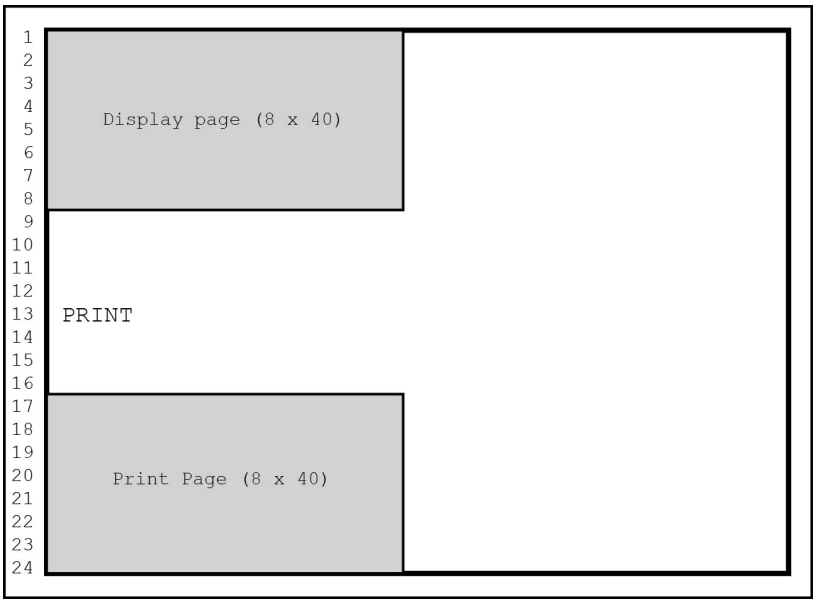
4.3.2 TESS Options

Field	Description
Alarm	When selected, mobile devices beep when the word **ALARM** appears on the application screen, in the location specified by the *Command Region* setting. The word **ALARM** should be a display-only field. *Command Region* must also be set. Default: Not selected. For more information see Command Region on page 36.
Clear	When selected, the Communications Server creates an empty entry field for an entry field that is filled with spaces. Default: Not selected.

Field	Description

Passthru	When selected, the Communications Server allows the host to send data directly to the serial port of the mobile device. This is commonly used for printing.
	Preparing Host Screens for Pass-Through:
	On the screen to be sent through the mobile device serial port, the word **PASSTHRU** has to appear on the first line, starting in the second column. The actual data to be sent to the mobile device may start anywhere below the first line.
	Attributes occupy a position in the screen buffer. An attribute placed between column 2 and the end of the word **PASSTHRU** will push all following characters one position to the right. Therefore, any required attributes should occupy column 1 of the first line (just preceding the word **PASSTHRU**).
	For example:
	`column: 1 2 3 4 5 6 7 8 9`
	`line 1: @ P A S S T H R U @`
	`line 2: @ P A R T :  1 2 3 4 5`
	where @ is an attribute.
	When the Communications Server is finished sending the data to the printer attached to the mobile device, it sends a packet containing only a Record Separator (0x1e) character to the host. The host must wait for this packet before sending any more screens (including other PASSTHRU screens) to the mobile device.
	Refer to the user manual for the mobile device for information about setting parameters on the mobile device for pass-through.
	Default: Not selected.

Procedures	Legacy setting. The last device to support this is the 7030. When selected, the Communications Server can send TESS procedures to the mobile devices. A TESS procedure is a group of TESS commands that can be executed by the TESS execute procedure command. Default: Not selected.
Local	Legacy setting. The last device to support this is the 7030. When selected, the Communications Server can provide pages to be loaded as local TESS procedures in the mobile devices. The local procedures are selected from a menu on the mobile device. The mobile device can perform these procedures when it is offline. Later when the mobile device is online, it sends the results of these functions to the host. *Procedures* must also be selected. Default: Not selected.
TSF/O	When selected, the Communications Server uses Psion Teklogix Screen-Formatter/Optimizer software (TSF/O). Default: Not selected.

Field	Description
Host Print	When selected, an application can send data to the display on the mobile device as well as to its attached printer. The text that is passed to the printer is formatted into a 24 x 80 application screen. If the host can initiate the print operation, the text is printed. The Communications Server identifies the additional text as a print page by the presence of the string **PRINT** beginning in the 2nd column of line 13 on the 24 x 80 screen. **PRINT** should be defined as display-only text. The print page is positioned below the display page of the mobile device (see the following diagram). The size of the print page is always the same as the display page of the mobile device (assuming that in the mobile device configuration, the page length is less than 12 lines). When *Host Print* is enabled, the Communications Server passes the print page to the mobile device after receiving the application screen from the host.  Unlike with the *Passthru* option, when using *Host Print* no escape commands can be sent to the printer. Support for printing must be enabled on the mobile device; refer to the appropriate user manual for the mobile device for more information Default: Not selected.
Remote Print	When enabled, the Communications Server sends the print page to a mobile device whenever the mobile device requests it (by sending the F17 function key from the mobile device, or the **PRINT** key on older mobile devices). The Communications Server sends the function response back to the host. Support for printing must be enabled on the mobile device; refer to the appropriate user manual for the mobile device for more information. Default: Not selected.

Field	Description
Pages	The number of host screens (or pages) stored on the mobile device. The Communications Server maintains an image of each page stored on the mobile device. After receiving an application screen, the Communications Server tries to match the screen with a stored page. If a similar page is already in the mobile device memory, the Communications Server instructs the mobile device to re-display its copy of the page; only the necessary changes are sent from the Communications Server. If no match is found, the complete page is sent to the mobile device. There is a corresponding parameter on the mobile device itself, and the actual number of saved pages is the smaller of the two values. A value of 1 (one) disables this feature. Values: 1 to 79 Default: 8
Transmit Line	When enabled, all modified data on the mobile device is automatically transmitted when the operator enters data into an entry field on or above this line. The value in this text box specifies the line on the screen which is designated as the transmit line. The last entry field on or above the transmit line on the screen is identified as the field which will cause all modified data to be sent to the host. Any entry fields that exist on lines below the transmit line will not cause the screen to be transmitted. A value of 0 (zero) disables this feature. A value of 24 causes the last entry field on each application screen to be defined as transmit-upon-entry. Values: 0 to 24 Default: 0
AIAG	The decimal value of the special character (ASCII) used to tag a field to use AIAG mode. When barcode data is entered on a mobile device, the mobile device searches for AIAG fields on the current page. These fields can accept the special barcode data. The data preloaded into the AIAG field by the application program determines whether a barcode is accepted. The format of the preloaded data is: <mode><AIAG prefix> The application program distinguishes an entry field as AIAG by preceding the entry field with this special AIAG character. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0 For the AIAG mode character table see AIAG Mode Values on page 36.

Field	Description
Visible Match Character	The decimal value of the special character (ASCII) used to tag a field to use visible match mode. With field matching, the host computer preloads data into an entry field. Now the mobile device operator can make an entry that matches this preloaded data. For visible match fields, the preloaded data is displayed in the entry field on the mobile device. The application program distinguishes an entry field as a match field by preceding it with a special character. The special character is entered as the decimal character code for one of the first 127 ASCII characters. For example, assume that the **>** character (ASCII decimal character code 62) is defined for visible match fields. This character must immediately precede the entry field: **Part #>_____** The field: **Part #>** includes the character **>** and is followed by the part number entry field on the screen. If any other character was chosen as the last character of the text, the entry field would not be a match field. The preloaded data sent to a mobile device may consist of the exact characters, special match characters or a combination of the two. For example, suppose you wish to preload an entry field with a part number. If the exact part number is known, you may preload the field with that part number. If more flexibility is required, and part numbers always begin with two alphabetic characters followed by a hyphen character and four digits, then the match string for the field could be: **&&-####**. If an entry is different from the preloaded data, the entry is displayed, the mobile device beeps and the cursor is in the first position of the match field. Now either another entry in the match field can be made, or the cursor can be moved to a new field. When an entry (even if it does not match the host preloaded data) is made in a match field, this entry is sent to the host as part of the modified data from the mobile device during the next transmission. A value of 0 (zero) disables this match field feature. Values: 0 to 255 Default: 0 For the Psion match characters see Match Characters on page 36.
Hidden Match Character	The decimal value of the special character (ASCII) used to tag a field to use hidden match mode. A special character is used to mark Hidden Match fields in a TESS screen. This character precedes the field contents of the Hidden Match field. In hidden match fields, as opposed to visible match fields, the preloaded entry is not displayed in the entry field on the mobile device). A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0 For the Psion match characters see Match Characters on page 36.

Field	Description
Serial I/O	The decimal value of the special character (ASCII) used to tag a field to use serial I/O mode. Serial I/O fields are special entry and fixed fields that accept input from, and output to, a serial port. The application program distinguishes this field as Serial I/O by preceding the field with a special character. If this character precedes a fixed field, the data is sent to the serial port of the mobile device. If it precedes an entry field, the field accepts data from the serial port of the mobile device. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0
Print Line	The starting line number of the print page on the application screen. A value of 1 (one) causes the display page to be printed. A value of 0 (zero) disables this feature. Values: 0 to 24 Default: 0
Print Form Length	The printer form length, in lines. Values: 0 to 24 Default: 0
Barcode	The decimal value of the special character (ASCII) used to tag a field to use barcode only mode. Barcode-input-only fields are special entry fields that only accept input from a barcode reader. The application program distinguishes an entry field as barcode-input-only by preceding the field with a special character. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0
Entry Line	The number of the first line displayed if there is no entry field above this line on the screen and if an entry field is at or below this line. The Entry Line parameter allows an automatic offset within the host screen. Normally, Psion mobile devices only display the upper left corner of the application screen because of their smaller display size. Values: 0 to 24 Default: 0
Field Overhead	The maximum number of characters allowed between two fixed fields which still allows the Communications Server to join them into one field. Sometimes the Communications Server will join two adjacent fixed fields and then send them as one field. This reduces the overhead on the radio link. For example, if two fields were 4 characters apart and this parameter was 5, then these fields would be joined into one. This feature affects fields with the **Normal** display attribute only. Values: 0 to 80 Default: 5

Field	Description
Command Region	These two pairs of text boxes define a region of the host screen which the Communications Server examines for the presence of reserved commands. The first text box of each pair contains the row number; the second contains the column number. These four numbers represent the row and column addresses of the upper left corner and the lower right corner of the command region. To define the last two lines of the host screen as the command region, for example, enter **23, 1 - 24, 80** The only commands supported in the command region are *ALARM* and *FONT*: • When the word **ALARM** is placed anywhere within the command region, the Communications Server sends a TESS beep command to the mobile device. • When the word **FONT** is placed anywhere within the command region, and followed by a number (the font code), the Communications Server sends the appropriate TESS Change Font command to the mobile device. For font codes see Font Code List for Open TekTerm on IngenuityWorking. Font codes are only required for versions of OTT before version D. Rows: 0to 24 Columns: 0to 80 Default: 0, 0 - 0, 0

AIAG Mode Values

The mode character is derived by starting with the decimal value 48—ASCII character 0 (zero)—and adding the appropriate value from the table below.

Code	Description
1	Prevent the AIAG prefix from being displayed.
2	Prevent the AIAG prefix from being sent to the host.
4	Cause a transmission to the host when all AIAG fields with this mode set are filled. The transmission is sent by a Function 0 (F0) code.
8	Allow overwriting of previously entered data.
16	Start the search for a matching AIAG field at the current cursor position. Otherwise, the cursor starts at the top of the page.

For example, the @ symbol is used to apply the cursor matching function, since adding 16 to 48 results in decimal value 64, which is the ASCII value for the character @.

Match Characters

Match Character	Use
#	Match a number
&	Match a letter (either case)
^	Match an upper case letter
_	Match a lower case letter
|	Match an alphanumeric character
"	Match a letter, number or space
?	Match a punctuation character
'	Match any character

Match Character	Use
:	Match all character positions in the field with the preceding character
;	Match any remaining characters, but not necessarily the remainder of the field, with the preceding character

4.3.3 HTML/HTTP Options

Field	Description
Foreground Colour	This is the foreground colour for the text that the Communications Server HTTP server sends to mobile devices connecting via HTTP. The choices are the 16 predefined HTML colour names. Values: Aqua, Black, Blue, Fuchsia, Gray, Green, Lime, Maroon, Navy, Olive, Purple, Red, Silver, Teal, White, Yellow Default: Black
Background Colour	This is the background colour, the colour of the HTML page, that the Communications Server HTTP server sends to mobile devices connecting via HTTP. The choices are the 16 predefined HTML colour names. Values: Aqua, Black, Blue, Fuchsia, Gray, Green, Lime, Maroon, Navy, Olive, Purple, Red, Silver, Teal, White, Yellow Default: Silver
User Data Font Size	This is the value for the HTML font size attribute that is applied to user data on the browser screen. Values: 1, 2, 3, 4, 5, 6, 7 Default: 3
Function Key Font Size	This is the size of the font that is used on the function key buttons on the browser screen. Values: 4pt, 6pt, 8pt, 10pt, 12pt, 14pt Default: 8pt
TSF/O	When selected the Communications Server uses Psion Teklogix Screen-Formatter/Optimizer software (TSF/O). Default: Selected.

4.4 3274 SNA Protocol Screen

Field	Description
Attention Key	The character sent back to the host when the user presses the **ATTN** function key on a Psion device. The actual key used at the device to obtain the **ATTN** function key is configured through the Function Key Mapping screen for this host connection. Values: ENTER, ATTN Default: ENTER

Field	Description
Use SSCP Sessions	When selected, the Communications Server attempts to establish an SSCP-LU session for a device before establishing an LU-LU session. Depending on the type of host, an SSCP-LU session may or may not be created. When this parameter is not selected, only LU-LU sessions will be used. Default: Selected.
PU Name	This name of a PU for this host. A 3274/SNA PU can handle only 254 LUs, so when a site has more than 254 devices it is necessary to create more than one host description each with its own dedicated PU description. For example, 3274/SNA Host 1 controls devices 1-254 and has a PU name of **DIRPU000** and 3274/SNA Host 2 controls devices 255-512 (if more than 512 devices are used, a third host would be required, etc.). Each PU operates independently, controlling its own device LUs with network addresses (NAUs) numbered from 2-255 (0 and 1 are reserved). Default: DIRPU000

4.5 3274 Function Key Mappings Screen

Use the function key list boxes to select a code that is sent to the host when the corresponding function key is pressed on the mobile device.

The 3274 emulator converts the mobile device function keys to Attention Identifier (AID) characters, as shown here:

Selected code	AID Character
ENTER	**<Enter>** key
F1 to F24	Program Function keys **<PF1>** to **<PF24>**
PA1	**<PA1>** Program Access key
PA2	**<PA2>** (CNCL) Program Access key
PA3	**<PA3>** Program Access key
CLEAR	**<PA4>** (Clear) Program Access key
RESET	**<Reset>** key
SESS	Opens a new Telnet session
SYSREQ	**<SysRq>** key
U	**<Test>** key

*Note: The **Enter** key on the mobile device only triggers a transmission to the host if the mobile device is configured to operate the **Enter** key as **function 0** (**F0**). Consult the user manual for the mobile device for more information.*

4.6 Typical Host Configuration

4.6.1 Definition in VTAM

Settings			Notes
TRCT1	PU	ADDR=C2,	Any 2 hexadecimal characters
		ANS=CONTINUE,	
		IDBLK=017,	**DBLK** should always be **017**
		IDNUM=000C2,	**IDBLK** and **IDNUM** together should match the **Exchange Identifier**.
		DLOGMOD=D4A32782,	
		DISCNT=NO,	
		IRETRY=YES,	
		ISTATUS=ACTIVE,	
		MODETAB=RAMODE,	
		MAXDATA=2042,	The **MAXDATA** parameter corresponds to the **Maximum PIU Size**.
		MAXOUT=7,	
		MAXPATH=2,	
		PUTYPE=2,	
		VPACING=0,	No pacing.
		USSTAB=USSSNA00,	
T10DX01	PATH	DIALNO=400000000002	This is the physical address of the Communications Server network card.
L01	LU	LOCADDR=02	The first device address is always **02**, the second **03**, and so on.
L02	LU	LOCADDR=03	
L03	LU	LOCADDR=04	
		USSTAB=USSNA	Default table
		DLOGMOD=SNA32782	Default table. All tables are IBM-supplied defaults for 3274, 3277 and 3278.

5 5250/TELNET HOST CONFIGURATION

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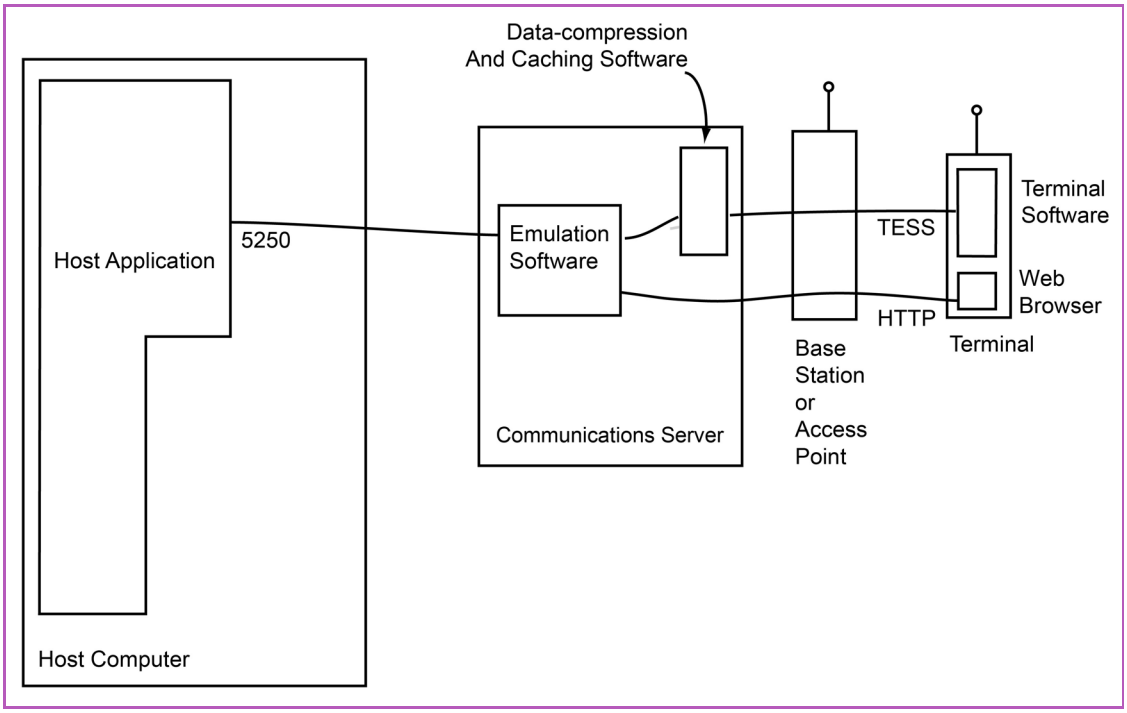
5.1 Overview

The Communications Server can emulate multiple TN5250 sessions. The emulation software inside the Communications Server converts the IBM-5294 data transparently to and from TESS or HTTP data which is then sent to and from the Psion devices. The connection between the Communications Server and its base stations, access points, and devices is transparent to the IBM host.



5.2 General Host Options Screen

Field	Description
Name	The unique name of the host. Default: Unnamed Host
Enabled	When selected the host task is started when the Communications Server software starts.
Emulation and protocol	Emulation and protocol combination for this host. Select: **5250/Telnet**
Terminal range	Terminal number range that communicates with this host. Range: 1 to 3840. For S900L, SW9500L, and SW9510L range is 1 to 50. Default: 1 to 32 For information on selecting the terminal range see Chapter 21: "Setting Terminal Numbers on the General Host Options Screen"

5.3 Emulation Options Screen

5.3.1 5250 Options

Field	Description
Write Error Code	**advisory text**: Error codes are sent to the mobile device as advisory text. This is written at the bottom of the screen. Default. **screen text**: Error codes are sent to the mobile device as regular screen text.
Use International EBCDIC	When selected the Communications Server uses the international EBCDIC character set, the positions of the **!** and **]** characters are swopped. Default: Not selected.
Allow null character in fixed fields	When selected, empty fields show video attributes properly when using 5250 emulation.
Terminal Protocol	The protocol used for the connection between the mobile devices and the Communications Server. Options are: **TESS/BCM**: This uses the Communications Server data caching, and page saving, features. **HTML/HTTP**: This uses the Communication Server HTTP server. The browser on the mobile devices must connect to port 80 on the Communications Server.
IBM3179-2 Default Color	The default colour for the mobile device. **Green**: Default. **TekTermDefined**: The green attribute is remapped to the TESS Default attribute.

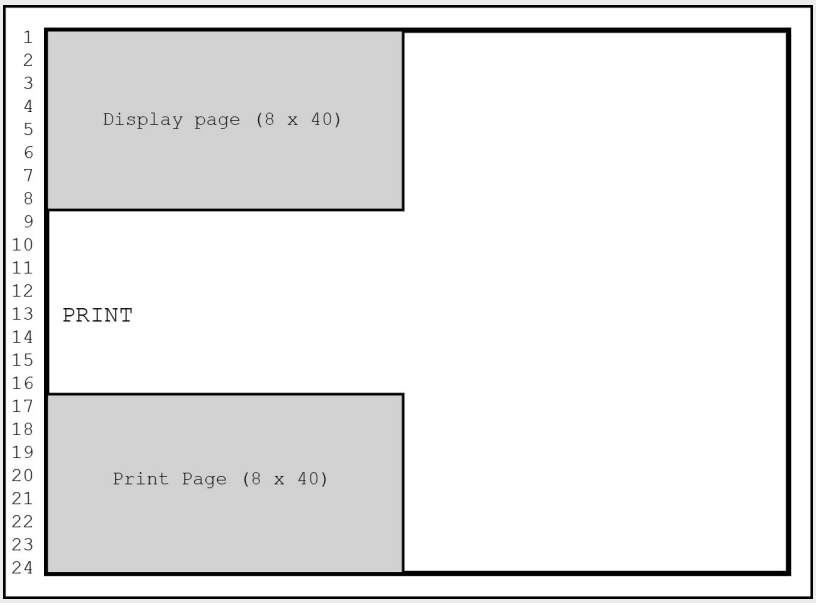
5.3.2 TESS Options

Field	Description
Field Underline Remapping	This is how the Communications Server renders underlined fields sent from the host. Values: **None**, **Blink**, **Bold**, **Reverse**. Default: **None**.
Alarm	When selected, mobile devices beep when the word **ALARM** appears on the application screen, in the location specified by the *Command Region* setting. The word **ALARM** should be a display-only field. *Command Region* must also be set. Default: Not selected.
Clear	When selected, the Communications Server creates an empty entry field for an entry field that is filled with spaces. Default: Not selected.

Field	Description

Passthru	When selected, the Communications Server allows the host to send data directly to the serial port of the mobile device. This is commonly used for printing.
	Preparing Host Screens for Pass-Through:
	On the screen to be sent through the mobile device serial port, the word **PASSTHRU** has to appear on the first line, starting in the second column. The actual data to be sent to the mobile device may start anywhere below the first line.
	Attributes occupy a position in the screen buffer. An attribute placed between column 2 and the end of the word **PASSTHRU** will push all following characters one position to the right. Therefore, any required attributes should occupy column 1 of the first line (just preceding the word **PASSTHRU**).
	For example:
	`column: 1 2 3 4 5 6 7 8 9`
	`line 1: @ P A S S T H R U @`
	`line 2: @ P A R T :  1 2 3 4 5`
	where @ is an attribute.
	When the Communications Server is finished sending the data to the printer attached to the mobile device, it sends a packet containing only a Record Separator (0x1e) character to the host. The host must wait for this packet before sending any more screens (including other PASSTHRU screens) to the mobile device.
	Refer to the user manual for the mobile device for information about setting parameters on the mobile device for pass-through.
	Default: Not selected.

Procedures	Legacy setting. The last device to support this is the 7030. When selected, the Communications Server can send TESS procedures to the mobile devices. A TESS procedure is a group of TESS commands that can be executed by the TESS execute procedure command. Default: Not selected.
Local	Legacy setting. The last device to support this is the 7030. When selected, the Communications Server can provide pages to be loaded as local TESS procedures in the mobile devices. The local procedures are selected from a menu on the mobile device. The mobile device can perform these procedures when it is offline. Later when the mobile device is online, it sends the results of these functions to the host. *Procedures* must also be selected. Default: Not selected.
TSF/O	When selected, the Communications Server uses Psion Teklogix Screen-Formatter/Optimizer software (TSF/O). Default: Not selected.

Field	Description
Host Print	When selected, an application can send data to the display on the mobile device as well as to its attached printer. The text that is passed to the printer is formatted into a 24 x 80 application screen. If the host can initiate the print operation, the text is printed. The Communications Server identifies the additional text as a print page by the presence of the string **PRINT** beginning in the 2nd column of line 13 on the 24 x 80 screen. **PRINT** should be defined as display-only text. The print page is positioned below the display page of the mobile device (see the following diagram). The size of the print page is always the same as the display page of the mobile device (assuming that in the mobile device configuration, the page length is less than 12 lines). When *Host Print* is enabled, the Communications Server passes the print page to the mobile device after receiving the application screen from the host.  Unlike with the *Passthru* option, when using *Host Print* no escape commands can be sent to the printer. Support for printing must be enabled on the mobile device; refer to the appropriate user manual for the mobile device for more information Default: Not selected.
Remote Print	When enabled, the Communications Server sends the print page to a mobile device whenever the mobile device requests it (by sending the F17 function key from the mobile device, or the **PRINT** key on older mobile devices). The Communications Server sends the function response back to the host. Support for printing must be enabled on the mobile device; refer to the appropriate user manual for the mobile device for more information. Default: Not selected.

Field	Description
Pages	The number of host screens (or pages) stored on the mobile device. The Communications Server maintains an image of each page stored on the mobile device. After receiving an application screen, the Communications Server tries to match the screen with a stored page. If a similar page is already in the mobile device memory, the Communications Server instructs the mobile device to re-display its copy of the page; only the necessary changes are sent from the Communications Server. If no match is found, the complete page is sent to the mobile device. There is a corresponding parameter on the mobile device itself, and the actual number of saved pages is the smaller of the two values. A value of 1 (one) disables this feature. Values: 1 to 79 Default: 8
Transmit Line	When enabled, all modified data on the mobile device is automatically transmitted when the operator enters data into an entry field on or above this line. The value in this text box specifies the line on the screen which is designated as the transmit line. The last entry field on or above the transmit line on the screen is identified as the field which will cause all modified data to be sent to the host. Any entry fields that exist on lines below the transmit line will not cause the screen to be transmitted. A value of 0 (zero) disables this feature. A value of 24 causes the last entry field on each application screen to be defined as transmit-upon-entry. Values: 0 to 24 Default: 0
AIAG	The decimal value of the special character (ASCII) used to tag a field to use AIAG mode. When barcode data is entered on a mobile device, the mobile device searches for AIAG fields on the current page. These fields can accept the special barcode data. The data preloaded into the AIAG field by the application program determines whether a barcode is accepted. The format of the preloaded data is: <mode><AIAG prefix> The application program distinguishes an entry field as AIAG by preceding the entry field with this special AIAG character. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0 For the AIAG mode character table see AIAG Mode Values on page 50.

Field	Description
Visible Match Character	The decimal value of the special character (ASCII) used to tag a field to use visible match mode. With field matching, the host computer preloads data into an entry field. Now the mobile device operator can make an entry that matches this preloaded data. For visible match fields, the preloaded data is displayed in the entry field on the mobile device. The application program distinguishes an entry field as a match field by preceding it with a special character. The special character is entered as the decimal character code for one of the first 127 ASCII characters. For example, assume that the **>** character (ASCII decimal character code 62) is defined for visible match fields. This character must immediately precede the entry field: **Part #>_____** The field: **Part #>** includes the character **>** and is followed by the part number entry field on the screen. If any other character was chosen as the last character of the text, the entry field would not be a match field. The preloaded data sent to a mobile device may consist of the exact characters, special match characters or a combination of the two. For example, suppose you wish to preload an entry field with a part number. If the exact part number is known, you may preload the field with that part number. If more flexibility is required, and part numbers always begin with two alphabetic characters followed by a hyphen character and four digits, then the match string for the field could be: **&&-####**. If an entry is different from the preloaded data, the entry is displayed, the mobile device beeps and the cursor is in the first position of the match field. Now either another entry in the match field can be made, or the cursor can be moved to a new field. When an entry (even if it does not match the host preloaded data) is made in a match field, this entry is sent to the host as part of the modified data from the mobile device during the next transmission. A value of 0 (zero) disables this match field feature. Values: 0 to 255 Default: 0 For the Psion match characters see Match Characters on page 48.
Hidden Match Character	The decimal value of the special character (ASCII) used to tag a field to use hidden match mode. A special character is used to mark Hidden Match fields in a TESS screen. This character precedes the field contents of the Hidden Match field. In hidden match fields, as opposed to visible match fields, the preloaded entry is not displayed in the entry field on the mobile device). A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0 For the Psion match characters see Match Characters on page 48.

Field	Description
Serial I/O	The decimal value of the special character (ASCII) used to tag a field to use serial I/O mode. Serial I/O fields are special entry and fixed fields that accept input from, and output to, a serial port. The application program distinguishes this field as Serial I/O by preceding the field with a special character. If this character precedes a fixed field, the data is sent to the serial port of the mobile device. If it precedes an entry field, the field accepts data from the serial port of the mobile device. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0
Print Line	The starting line number of the print page on the application screen. A value of 1 (one) causes the display page to be printed. A value of 0 (zero) disables this feature. Values: 0 to 24 Default: 0
Print Form Length	The printer form length, in lines. Values: 0 to 24 Default: 0
Barcode	The decimal value of the special character (ASCII) used to tag a field to use barcode only mode. Barcode-input-only fields are special entry fields that only accept input from a barcode reader. The application program distinguishes an entry field as barcode-input-only by preceding the field with a special character. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0
Entry Line	The number of the first line displayed if there is no entry field above this line on the screen and if an entry field is at or below this line. The Entry Line parameter allows an automatic offset within the host screen. Normally, Psion mobile devices only display the upper left corner of the application screen because of their smaller display size. Values: 0 to 24 Default: 0
Field Overhead	The maximum number of characters allowed between two fixed fields which still allows the Communications Server to join them into one field. Sometimes the Communications Server will join two adjacent fixed fields and then send them as one field. This reduces the overhead on the radio link. For example, if two fields were 4 characters apart and this parameter was 5, then these fields would be joined into one. This feature affects fields with the **Normal** display attribute only. Values: 0 to 80 Default: 5

Field	Description
Command Region	These two pairs of text boxes define a region of the host screen which the Communications Server examines for the presence of reserved commands. The first text box of each pair contains the row number; the second contains the column number. These four numbers represent the row and column addresses of the upper left corner and the lower right corner of the command region. To define the last two lines of the host screen as the command region, for example, enter **23, 1 - 24, 80** The only commands supported in the command region are *ALARM* and *FONT*: • When the word **ALARM** is placed anywhere within the command region, the Communications Server sends a TESS beep command to the mobile device. • When the word **FONT** is placed anywhere within the command region, and followed by a number (the font code), the Communications Server sends the appropriate TESS Change Font command to the mobile device. For font codes see Font Code List for Open TekTerm on IngenuityWorking. Font codes are only required for versions of OTT before version D. Rows: 0to 24 Columns: 0to 80 Default: 0, 0 - 0, 0

AIAG Mode Values

The mode character is derived by starting with the decimal value 48—ASCII character 0 (zero)—and adding the appropriate value from the table below.

Code	Description
1	Prevent the AIAG prefix from being displayed.
2	Prevent the AIAG prefix from being sent to the host.
4	Cause a transmission to the host when all AIAG fields with this mode set are filled. The transmission is sent by a Function 0 (F0) code.
8	Allow overwriting of previously entered data.
16	Start the search for a matching AIAG field at the current cursor position. Otherwise, the cursor starts at the top of the page.

For example, the @ symbol is used to apply the cursor matching function, since adding 16 to 48 results in decimal value 64, which is the ASCII value for the character @.

Match Characters

Match Character	Use
#	Match a number
&	Match a letter (either case)
^	Match an upper case letter
_	Match a lower case letter
|	Match an alphanumeric character
"	Match a letter, number or space
?	Match a punctuation character
'	Match any character

Match Character	Use
:	Match all character positions in the field with the preceding character
;	Match any remaining characters, but not necessarily the remainder of the field, with the preceding character

5.3.3 HTML/HTTP Options

Field	Description
Enable Colour Support	When selected, when an application fills a field with spaces, an empty entry field is displayed. Default: Not selected.
Foreground Colour	This is the foreground colour for the text that the Communications Server HTTP server sends to mobile devices connecting via HTTP. The choices are the 16 predefined HTML colour names. Values: Aqua, Black, Blue, Fuchsia, Gray, Green, Lime, Maroon, Navy, Olive, Purple, Red, Silver, Teal, White, Yellow Default: Black
Background Colour	This is the background colour, the colour of the HTML page, that the Communications Server HTTP server sends to mobile devices connecting via HTTP. The choices are the 16 predefined HTML colour names. Values: Aqua, Black, Blue, Fuchsia, Gray, Green, Lime, Maroon, Navy, Olive, Purple, Red, Silver, Teal, White, Yellow Default: Silver
User Data Font Size	This is the value for the HTML font size attribute that is applied to user data on the browser screen. Values: 1, 2, 3, 4, 5, 6, 7 Default: 3
Function Key Font Size	This is the size of the font that is used on the function key buttons on the browser screen. Values: 4pt, 6pt, 8pt, 10pt, 12pt, 14pt Default: 8pt
TSF/O	When selected the Communications Server uses Psion Teklogix Screen-Formatter/Optimizer software (TSF/O). Default: Selected.

5.4 5250 Telnet Protocol Options Screen

Field	Description
Terminal Type	The type of terminal to be emulated by the Communications Server. Values: **IBM-5252-11**, **IBM-5555-B01**, **3179-2** Default: **IBM-5252-11**
Host Port	The port number on the host for this connection. Values: 1 to 32767 Default: 23

Field	Description
Maximum Sessions per Terminal	The maximum number of Telnet connections that can originate from each mobile device. Values: 1 to 127 Default: 4 If *Enable Telnet Enhancements* (previously called *Enable Virtual Device Names*) is not selected, all the sessions use device names supplied by the host. If *Enable Telnet Enhancements* (previously called *Enable Virtual Device Names*) is selected, the Communications Server supplies device names for all sessions and one of the following occurs: • If the maximum number of sessions is greater than 1 (one), flexible device names are used. Flexible device names have a session letter appended to the fixed portion of the device name. • If this maximum number of sessions is equal to 1 (one), device names are fixed: No session letter is appended. For more information see Enable Telnet Enhancements on page 53.
First Local Terminal Port	The port number from which the Communications Server makes a Telnet connection for the first terminal. Additional Telnet sessions are assigned higher port numbers. Values: 1 to 32767 Default: 10000
Local IP Address to Bind	The IP address of the Communications Server interface that connects to this host. It is used with the local port numbers to create a unique socket for each mobile device session. Default: 0.0.0.0
First Terminal Listen Port	The lowest port number on which the Communications Server listens for Telnet connections initiated by the host. When set to 0 (zero) this option is disabled. Values: 0 to 32767 Default: 0
Actively Negotiate with Host	When selected, the Communications Server performs advanced negotiations with the host during Telnet connection. Default: Not selected.
Auto-telnet/login Enable	When enabled, the host connection is automatically selected by the *Auto-telnet Host* parameter. When disabled, Telnet sessions from the mobile devices must be manually initiated. Values: DISABLE, AUTO-TELNET Default: DISABLE
Auto-telnet Host	The name or the IP address of the host to which auto-Telnet requests are directed. Any host name which can be used at the **TCP>** prompt on the mobile device may be used here. Default: None. **Note:** The host name must be resolvable by the Communications Server: The Communications Server must be able to obtain an IP address for it. For example, the host name may correspond to an entry in the Communications Server host table, or the Communications Server may be able to query a domain name server.
Auto-telnet Without User Action	When selected, the Communications Server attempts to connect to the host as soon as a mobile device initializes, and it attempts to reconnect if the Telnet session closes. Default: Selected.

Field	Description
Enable Telnet Enhancements or Enable Virtual Device Names	When selected, the Communications Server requests a specific virtual device name from the host for each mobile device session. When not selected, the host assigns a device name to each session. Virtual device names are configured through the *5250 Telnet Terminal Naming Screen* or using the *Device Name Prefix*. When this feature is selected, the following sequence is used to assign virtual device names: 1 If a full device name has been specified for a terminal using the *5250 Telnet Terminal Naming Screen*, that name is assigned. 2 If the *Device Name Prefix* is configured, this prefix is used to generate a device name for the terminal. 3 The host assigns a device name. Device names can be either fixed or flexible. Flexible device names are created when the maximum number of sessions is configured to be greater than 1 (one). In this case, each device name has a maximum length of 10 characters. This consists of a maximum of 9 fixed characters with an incrementing session letter appended to them. If the requested name is not available on the host, the session letter increments until a successful connection is established. Fixed names are created when the maximum number of sessions is set to 1 (one). In this case, each device name has a maximum length of 10 fixed characters. There is no session letter appended. If the requested name is not available on the host, the mobile device displays a message instructing the user to contact the system administrator. Default: Not selected. For more information see Section 5.4.1 5250 Telnet Terminal Naming Screen on page 54 and Device Name Prefix on page 53.
Custom Device Names	Click **Configure** to open the *5250 Telnet Terminal Naming Screen*. For more information see Section 5.4.1 5250 Telnet Terminal Naming Screen on page 54.
Device Name Prefix	A prefix for the Communications Server-generated virtual device name. The device name sent to the host starts with the prefix, followed by the terminal number, which may be followed by a session letter. For example, if the virtual device name prefix is PTX, the first session on terminal number 2 receives a virtual device name of PTX0002A. For this setting to be active, *Enable Telnet Enhancements* must be selected. The prefix can include uppercase letters A to Z, numbers 0 to 9, and the special characters $, # and @. Lower case letters are accepted and translated to uppercase characters. The prefix must not begin with a number. Values: 1 to 5 characters Default: None.
Display Emulation Support (Code page, Character Set, Keyboard Type)	The codepage and keyboard type that are configured on the host or server. Select from the drop-down list. This setting must be identical to the host setting so that the correct characters are sent to the host application. Default: **037 USA,Canada(37,697,USB)**

5.4.1 5250 Telnet Terminal Naming Screen

Field	Description
Terminal number	The number of the terminal which receives the name in *Terminal name*. Values: 1 to <number of configured terminals> Default: 1
Terminal name	A virtual device name for the terminal. It can include uppercase letters A to Z, numbers 0 to 9, and the special characters $, # and @. Lower case letters are accepted and translated to uppercase characters. The prefix must not begin with a number. When using flexible device names (maximum number of sessions is greater than 1), the maximum length for the terminal name is 9 characters. More characters results in a validation error. Values: 1 to 10 characters. Default: None.

Buttons

Button	Description
Show/Set	Displays the virtual device name associated with the terminal number. If you have just entered a terminal number and virtual device name, press this button to add the terminal number and virtual device name to the list of configured terminals. **Note:** If a name disappears from the *Terminal Name* text box after the **Show/Set** button has been pressed, the last terminal number entered has not been registered by the Communications Server system, and the name has been saved to the previous terminal number. It is recommended that the terminal names be frequently checked during entry through the *Terminal Names* screen.
Delete	Deletes the currently-displayed terminal number and virtual device name from the list.
OK	Saves changes to the database and returns to the 5250 Telnet Protocol Options Screen.
Validate	Validates, with the option to save, the changes to the Communications Server database. On the *Validation Results* screen, after reviewing any error messages, you can click one of the following: • **Cancel**: Returns to the *Configuration Main Menu* Screen. • **Commit**: Commits the entire database and returns to the *Configuration Main Menu* screen. • **Undo**: Discards all database changes since the last database commit, and returns to the *Configuration Main Menu* screen.
Show Terminals	Displays the list of currently-configured terminal names.

5.5 Function Key Mappings Options Screen

Use the function key list boxes to select a code that is sent to the host when the corresponding function key is pressed on the mobile device.

5.6 Typical Host Configuration

5.6.1 Line Description

Parameter		
Line description	LIND	ENETLINE
Option		*BASIC
Category of line		*ELAN
Resource name	RSRCNAME	LIN021
Online at IPL	ONLINE	*YES
Vary on wait	VRYWAIT	*NOWAIT
Network controller		RFCTRLENET
Local adapter address	ADPTADR	08005AB7C3FD
Exchange identifier	EXCHID	05629A5A
Ethernet standard		*ALL
Maximum controllers	MAXCTL	40
Error threshold level		*OFF
Text		
Option		*APPN
Category of line		*ELAN
Link speed		10M
Cost/connect time		0
Cost/byte		0
Security for line		*NONSECURE
Propagation delay		*LAN
User-defined 1		128
User-defined 2		128
User-defined 2		128
Autocreate controller		*NO

Source Service Access Points

SSAP	Maximum Frame	Type
AA	1496	*NONSNA

5.6.2 Controller Description

Parameter		
Controller description	CTRD	RFCTRLENET
Option		*BASIC

Parameter		
Category of controller		*NET
Attached line		ENETLINE
Online at IPL	ONLINE	*YES
Text		*BLANK

5.6.3 TCP/IP Link

Parameter		
Line description	DEVD	ENETLINE
Internet address		50.0.1.1
Link type		*ELAN
Auto start link		*YES

6 5250/SNA HOST CONFIGURATION

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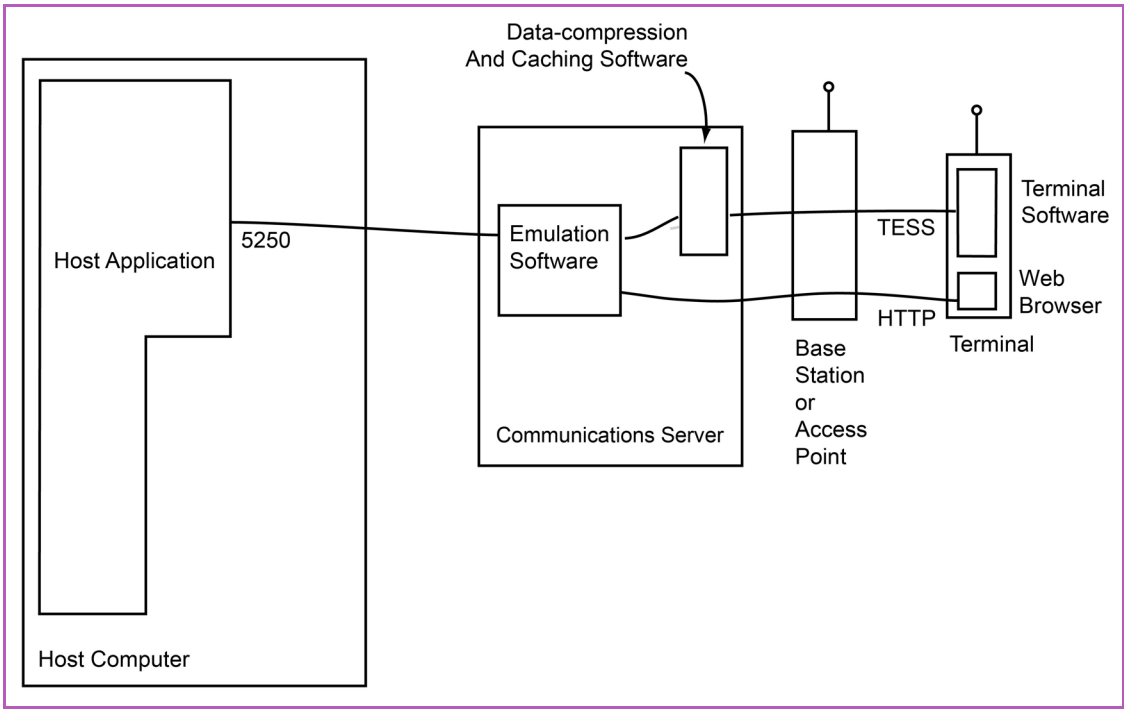
6.1 Overview

The Communications Server can emulate an IBM 5250 controller connected to a number of IBM terminals. The emulation software inside the Communications Server converts the 5250 data transparently to and from TESS or HTTP data which is then sent to and from the Psion devices. The connection between the Communications Server and its base stations, access points, and devices is transparent to the IBM host.



Warning: ***When you are using the SNA protocol, IBM PCOMM software must be installed on the Communications Server.***

6.2 General Host Options Screen

Field	Description
Name	The unique name of the host. Default: Unnamed Host
Enabled	When selected the host task is started when the Communications Server software starts.
Emulation and protocol	Emulation and protocol combination for this host. Select: **5250/SNA**
Terminal range	Terminal number range that communicates with this host. Range: 1 to 3840. For S900L, SW9500L, and SW9510L range is 1 to 50. Default: 1 to 32 For information on selecting the terminal range see Chapter 21: "Setting Terminal Numbers on the General Host Options Screen"

6.3 Emulation Options Screen

6.3.1 5250 Options

Field	Description
Write Error Code	**advisory text**: Error codes are sent to the mobile device as advisory text. This is written at the bottom of the screen. Default. **screen text**: Error codes are sent to the mobile device as regular screen text.
Use International EBCDIC	When selected the Communications Server uses the international EBCDIC character set, the positions of the **!** and **]** characters are swopped. Default: Not selected.
Allow null character in fixed fields	When selected, empty fields show video attributes properly when using 5250 emulation.
Terminal Protocol	The protocol used for the connection between the mobile devices and the Communications Server. Options are: **TESS/BCM**: This uses the Communications Server data caching, and page saving, features. **HTML/HTTP**: This uses the Communication Server HTTP server. The browser on the mobile devices must connect to port 80 on the Communications Server.
IBM3179-2 Default Color	The default colour for the mobile device. **Green**: Default. **TekTermDefined**: The green attribute is remapped to the TESS Default attribute.

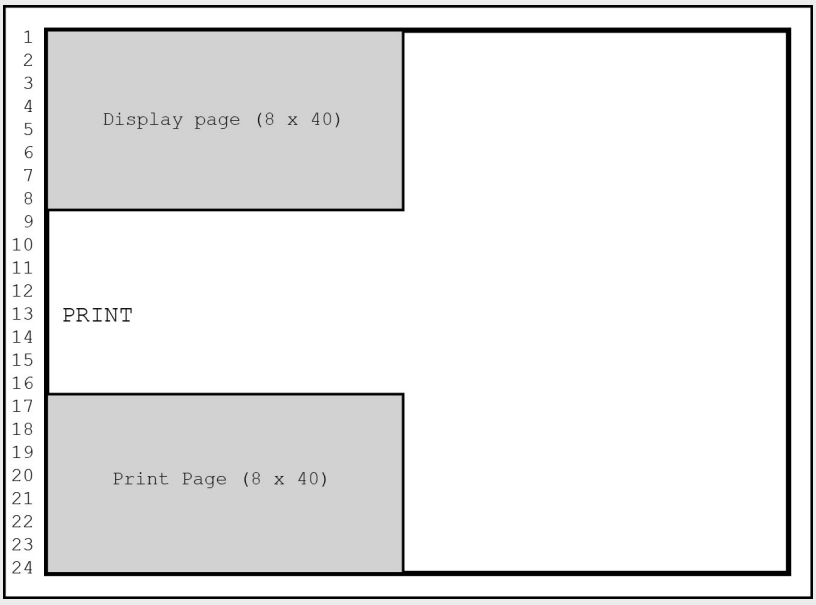
6.3.2 TESS Options

Field	Description
Field Underline Remapping	This is how the Communications Server renders underlined fields sent from the host. Values: **None**, **Blink**, **Bold**, **Reverse**. Default: **None**.
Alarm	When selected, mobile devices beep when the word **ALARM** appears on the application screen, in the location specified by the *Command Region* setting. The word **ALARM** should be a display-only field. *Command Region* must also be set. Default: Not selected.
Clear	When selected, the Communications Server creates an empty entry field for an entry field that is filled with spaces. Default: Not selected.

Field	Description

Passthru	When selected, the Communications Server allows the host to send data directly to the serial port of the mobile device. This is commonly used for printing.
	Preparing Host Screens for Pass-Through:
	On the screen to be sent through the mobile device serial port, the word **PASSTHRU** has to appear on the first line, starting in the second column. The actual data to be sent to the mobile device may start anywhere below the first line.
	Attributes occupy a position in the screen buffer. An attribute placed between column 2 and the end of the word **PASSTHRU** will push all following characters one position to the right. Therefore, any required attributes should occupy column 1 of the first line (just preceding the word **PASSTHRU**).
	For example:
	`column: 1 2 3 4 5 6 7 8 9`
	`line 1: @ P A S S T H R U @`
	`line 2: @ P A R T :  1 2 3 4 5`
	where @ is an attribute.
	When the Communications Server is finished sending the data to the printer attached to the mobile device, it sends a packet containing only a Record Separator (0x1e) character to the host. The host must wait for this packet before sending any more screens (including other PASSTHRU screens) to the mobile device.
	Refer to the user manual for the mobile device for information about setting parameters on the mobile device for pass-through.
	Default: Not selected.

Procedures	Legacy setting. The last device to support this is the 7030. When selected, the Communications Server can send TESS procedures to the mobile devices. A TESS procedure is a group of TESS commands that can be executed by the TESS execute procedure command. Default: Not selected.
Local	Legacy setting. The last device to support this is the 7030. When selected, the Communications Server can provide pages to be loaded as local TESS procedures in the mobile devices. The local procedures are selected from a menu on the mobile device. The mobile device can perform these procedures when it is offline. Later when the mobile device is online, it sends the results of these functions to the host. *Procedures* must also be selected. Default: Not selected.
TSF/O	When selected, the Communications Server uses Psion Teklogix Screen-Formatter/Optimizer software (TSF/O). Default: Not selected.

Field	Description
Host Print	When selected, an application can send data to the display on the mobile device as well as to its attached printer. The text that is passed to the printer is formatted into a 24 x 80 application screen. If the host can initiate the print operation, the text is printed. The Communications Server identifies the additional text as a print page by the presence of the string **PRINT** beginning in the 2nd column of line 13 on the 24 x 80 screen. **PRINT** should be defined as display-only text. The print page is positioned below the display page of the mobile device (see the following diagram). The size of the print page is always the same as the display page of the mobile device (assuming that in the mobile device configuration, the page length is less than 12 lines). When *Host Print* is enabled, the Communications Server passes the print page to the mobile device after receiving the application screen from the host.  Unlike with the *Passthru* option, when using *Host Print* no escape commands can be sent to the printer. Support for printing must be enabled on the mobile device; refer to the appropriate user manual for the mobile device for more information Default: Not selected.
Remote Print	When enabled, the Communications Server sends the print page to a mobile device whenever the mobile device requests it (by sending the F17 function key from the mobile device, or the **PRINT** key on older mobile devices). The Communications Server sends the function response back to the host. Support for printing must be enabled on the mobile device; refer to the appropriate user manual for the mobile device for more information. Default: Not selected.

Field	Description
Pages	The number of host screens (or pages) stored on the mobile device. The Communications Server maintains an image of each page stored on the mobile device. After receiving an application screen, the Communications Server tries to match the screen with a stored page. If a similar page is already in the mobile device memory, the Communications Server instructs the mobile device to re-display its copy of the page; only the necessary changes are sent from the Communications Server. If no match is found, the complete page is sent to the mobile device. There is a corresponding parameter on the mobile device itself, and the actual number of saved pages is the smaller of the two values. A value of 1 (one) disables this feature. Values: 1 to 79 Default: 8
Transmit Line	When enabled, all modified data on the mobile device is automatically transmitted when the operator enters data into an entry field on or above this line. The value in this text box specifies the line on the screen which is designated as the transmit line. The last entry field on or above the transmit line on the screen is identified as the field which will cause all modified data to be sent to the host. Any entry fields that exist on lines below the transmit line will not cause the screen to be transmitted. A value of 0 (zero) disables this feature. A value of 24 causes the last entry field on each application screen to be defined as transmit-upon-entry. Values: 0 to 24 Default: 0
AIAG	The decimal value of the special character (ASCII) used to tag a field to use AIAG mode. When barcode data is entered on a mobile device, the mobile device searches for AIAG fields on the current page. These fields can accept the special barcode data. The data preloaded into the AIAG field by the application program determines whether a barcode is accepted. The format of the preloaded data is: <mode><AIAG prefix> The application program distinguishes an entry field as AIAG by preceding the entry field with this special AIAG character. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0 For the AIAG mode character table see AIAG Mode Values on page 66.

Field	Description
Visible Match Character	The decimal value of the special character (ASCII) used to tag a field to use visible match mode. With field matching, the host computer preloads data into an entry field. Now the mobile device operator can make an entry that matches this preloaded data. For visible match fields, the preloaded data is displayed in the entry field on the mobile device. The application program distinguishes an entry field as a match field by preceding it with a special character. The special character is entered as the decimal character code for one of the first 127 ASCII characters. For example, assume that the **>** character (ASCII decimal character code 62) is defined for visible match fields. This character must immediately precede the entry field: **Part #>_____** The field: **Part #>** includes the character **>** and is followed by the part number entry field on the screen. If any other character was chosen as the last character of the text, the entry field would not be a match field. The preloaded data sent to a mobile device may consist of the exact characters, special match characters or a combination of the two. For example, suppose you wish to preload an entry field with a part number. If the exact part number is known, you may preload the field with that part number. If more flexibility is required, and part numbers always begin with two alphabetic characters followed by a hyphen character and four digits, then the match string for the field could be: **&&-####**. If an entry is different from the preloaded data, the entry is displayed, the mobile device beeps and the cursor is in the first position of the match field. Now either another entry in the match field can be made, or the cursor can be moved to a new field. When an entry (even if it does not match the host preloaded data) is made in a match field, this entry is sent to the host as part of the modified data from the mobile device during the next transmission. A value of 0 (zero) disables this match field feature. Values: 0 to 255 Default: 0 For the Psion match characters see Match Characters on page 66.
Hidden Match Character	The decimal value of the special character (ASCII) used to tag a field to use hidden match mode. A special character is used to mark Hidden Match fields in a TESS screen. This character precedes the field contents of the Hidden Match field. In hidden match fields, as opposed to visible match fields, the preloaded entry is not displayed in the entry field on the mobile device). A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0 For the Psion match characters see Match Characters on page 66.

Field	Description
Serial I/O	The decimal value of the special character (ASCII) used to tag a field to use serial I/O mode. Serial I/O fields are special entry and fixed fields that accept input from, and output to, a serial port. The application program distinguishes this field as Serial I/O by preceding the field with a special character. If this character precedes a fixed field, the data is sent to the serial port of the mobile device. If it precedes an entry field, the field accepts data from the serial port of the mobile device. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0
Print Line	The starting line number of the print page on the application screen. A value of 1 (one) causes the display page to be printed. A value of 0 (zero) disables this feature. Values: 0 to 24 Default: 0
Print Form Length	The printer form length, in lines. Values: 0 to 24 Default: 0
Barcode	The decimal value of the special character (ASCII) used to tag a field to use barcode only mode. Barcode-input-only fields are special entry fields that only accept input from a barcode reader. The application program distinguishes an entry field as barcode-input-only by preceding the field with a special character. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0
Entry Line	The number of the first line displayed if there is no entry field above this line on the screen and if an entry field is at or below this line. The Entry Line parameter allows an automatic offset within the host screen. Normally, Psion mobile devices only display the upper left corner of the application screen because of their smaller display size. Values: 0 to 24 Default: 0
Field Overhead	The maximum number of characters allowed between two fixed fields which still allows the Communications Server to join them into one field. Sometimes the Communications Server will join two adjacent fixed fields and then send them as one field. This reduces the overhead on the radio link. For example, if two fields were 4 characters apart and this parameter was 5, then these fields would be joined into one. This feature affects fields with the **Normal** display attribute only. Values: 0 to 80 Default: 5

Field	Description
Command Region	These two pairs of text boxes define a region of the host screen which the Communications Server examines for the presence of reserved commands. The first text box of each pair contains the row number; the second contains the column number. These four numbers represent the row and column addresses of the upper left corner and the lower right corner of the command region. To define the last two lines of the host screen as the command region, for example, enter **23, 1 - 24, 80** The only commands supported in the command region are *ALARM* and *FONT*: • When the word **ALARM** is placed anywhere within the command region, the Communications Server sends a TESS beep command to the mobile device. • When the word **FONT** is placed anywhere within the command region, and followed by a number (the font code), the Communications Server sends the appropriate TESS Change Font command to the mobile device. For font codes see Font Code List for Open TekTerm on IngenuityWorking. Font codes are only required for versions of OTT before version D. Rows: 0to 24 Columns: 0to 80 Default: 0, 0 - 0, 0

AIAG Mode Values

The mode character is derived by starting with the decimal value 48—ASCII character 0 (zero)—and adding the appropriate value from the table below.

Code	Description
1	Prevent the AIAG prefix from being displayed.
2	Prevent the AIAG prefix from being sent to the host.
4	Cause a transmission to the host when all AIAG fields with this mode set are filled. The transmission is sent by a Function 0 (F0) code.
8	Allow overwriting of previously entered data.
16	Start the search for a matching AIAG field at the current cursor position. Otherwise, the cursor starts at the top of the page.

For example, the @ symbol is used to apply the cursor matching function, since adding 16 to 48 results in decimal value 64, which is the ASCII value for the character @.

Match Characters

Match Character	Use
#	Match a number
&	Match a letter (either case)
^	Match an upper case letter
_	Match a lower case letter
|	Match an alphanumeric character
"	Match a letter, number or space
?	Match a punctuation character
'	Match any character

Match Character	Use
:	Match all character positions in the field with the preceding character
;	Match any remaining characters, but not necessarily the remainder of the field, with the preceding character

6.3.3 HTML/HTTP Options

Field	Description
Enable Colour Support	When selected, when an application fills a field with spaces, an empty entry field is displayed. Default: Not selected.
Foreground Colour	This is the foreground colour for the text that the Communications Server HTTP server sends to mobile devices connecting via HTTP. The choices are the 16 predefined HTML colour names. Values: Aqua, Black, Blue, Fuchsia, Gray, Green, Lime, Maroon, Navy, Olive, Purple, Red, Silver, Teal, White, Yellow Default: Black
Background Colour	This is the background colour, the colour of the HTML page, that the Communications Server HTTP server sends to mobile devices connecting via HTTP. The choices are the 16 predefined HTML colour names. Values: Aqua, Black, Blue, Fuchsia, Gray, Green, Lime, Maroon, Navy, Olive, Purple, Red, Silver, Teal, White, Yellow Default: Silver
User Data Font Size	This is the value for the HTML font size attribute that is applied to user data on the browser screen. Values: 1, 2, 3, 4, 5, 6, 7 Default: 3
Function Key Font Size	This is the size of the font that is used on the function key buttons on the browser screen. Values: 4pt, 6pt, 8pt, 10pt, 12pt, 14pt Default: 8pt
TSF/O	When selected the Communications Server uses Psion Teklogix Screen-Formatter/Optimizer software (TSF/O). Default: Selected.

6.4 Protocol Options Screen

Field	Description
Host Name	The SNA name of the local machine or host. This is the name the Communications Server software uses to communicate on the SNA network with the AS/400. It must match the *Local Control Point Name* configured in the IBM PCOMM software used with Communications Server. It must also match the *Remote control point* parameter in the AS/400 Controller Description. The name must use the SNA Type A character set, which includes uppercase letters A to Z, numbers 0 to 9, and the special characters $, # and @. Lower case letters are accepted and translated to uppercase characters. An SNA Type A character string must not begin with a number. Default: TLXLCPN For more information see Remote control point on page 71.

Field	Description
User Name	The user name for this host connection. This parameter must correspond to a valid account on the host. This is for security verification of the host connection only, when the connection is made to the host. The user must still log in normally. The user name must use the SNA Type A character set, which includes uppercase letters A to Z, numbers 0 to 9, and the special characters $, # and @. Lower case letters are accepted and translated to uppercase characters. An SNA Type A character string must not begin with a number. Default: TEKUSER
Password	The password for this host connection. This parameter must correspond to a valid account at the host. This is for security verification of the host connection only, when the connection is made to the host. The user must still log in normally. The password must use the SNA Type A character set, which includes uppercase letters A- to Z, numbers 0 to 9, and the special characters $, # and @. Lower case letters are accepted and translated to uppercase characters. An SNA Type A character string must not begin with a number. Default: TEKPASS
Enable Connect Screen	When selected, the Communications Server sends a special screen to the mobile device when it is unable to connect to the host. Pressing **ENTER** on the mobile device causes the Communications Server to reattempt connection to the host. Default: Not selected.
Reconnection Timeout (seconds)	The maximum time that the Communications Server waits for a reply when attempting a connection to the host. If there is no reply, it attempts another connection, to the maximum number of times specified in the *Maximum Reconnection Attempts* parameter. Default: 30
Maximum Reconnection Attempts	The maximum number of times that the Communications Server attempts to connect to the host if previous attempts fails. Default: 3

The Mode Parameters

Field	Description
Name	The name of the mode on the host. This name must use the SNA Type A character set, which includes uppercase letters A to Z, numbers 0 to 9, and the special characters $, # and @. Lower case letters are accepted and translated to uppercase characters. An SNA Type A character string must not begin with a number. Default: QPCSUPP
LU Prefix	The exchange identifier for this host connection. This is the prefix attached to the terminal number to form the LU name. The prefix may be 1 to 5 characters long, and the terminal number may be 1 to 4 characters long. The maximum length of the LU name formed from these is eight characters. Default: TLX00
Number of First Terminal	The number of the first terminal that uses this mode and host connection. Default: 1
Number of Last Terminal	The number of the last terminal that uses this mode and host connection. Default: 32

6.5 Function Key Mappings Options Screen

Use the function key list boxes to select a code that is sent to the host when the corresponding function key is pressed on the mobile device.

6.6 Typical Host Configuration

6.6.1 The Network Description

Network Attributes	Value	Notes
Current system name	S1029A5A	
Pending system name		
Local network ID	APPN	If the Communications Server is connected to the same local network as the host, this parameter must match the **Network Name** on the *SNA Protocol Configuration*. for more informations see Network Name on page 145.
Local control point name	TLXLCPN	
Default local location	TLXDLLN	
Default mode	BLANK	
APPN node type	*ENDNODE	
Data compressions	*NONE	
Intermediate data compressions	*NONE	
Maximum number of intermediate sessions	200	
Route addition resistance	128	
Server network ID/control point name	*LCLNETID *ANY	

6.6.2 The Line Description

This is a typical line description for Ethernet.

Parameter	Setting	Notes
Line description	ETHLINE	
Option	*BASIC	
Category of line	*ELAN	
Resource name	CMN06	
Online at IPL	*YES	
Vary on wait	*NOWAIT	
Network controller	ETHLINET00	
Local adapter address	0004AC123456	
Exchange identifier	05612345	
Ethernet standard	*ALL	

Parameter	Setting	Notes
Line speed	10M	
Current line speed	10M	
Duplex	*HALF	
Current duplex	*HALF	
Maximum controllers	256	
Error threshold level	*OFF	
Generate test frame	*YES	
Text	*Ethernet Line	
Link speed	10M	
Cost/connect time	0	
Cost/byte	0	
Security for line	*NONSECURE	
Propagation delay	*LAN	
User-defined 1	128	
User-defined 2	128	
User-defined 3	128	
Autocreate controller	*YES	The Autocreate controller parameter should be set to ***YES**. This allows the system to automatically configure new controller descriptions and device descriptions for attached Communications Servers when they boot up.
Autodelete controller	1440	
Recovery limits	:	
Count limit	2	
Time interval	5	

Table 6.1 Source Service Access Points

SSAP	Maximum Frame	Type
04	*1496	*SNA
12	*1496	*NONSNA
AA	*1496	*NONSNA
08	*1496	*SNA
0C	*1496	*SNA

6.6.3 Controller Description

The controller descriptions are created automatically by the host, if *Autocreate controller* is set to ***YES**. See Autocreate controller on page 70.

This is a typical controller description:

Parameter	Setting	Notes
Controller description	TLX9500	
Option	*BASIC	
Category of controller	*APPC	
Link type	*LAN	
Online at IPL	*NO	
Active switched line	ETHERNET	
Character code	*EBCDIC	
Maximum frame size	16393	
Remote network identifier	APPN	If the Communications Server is connected to a remote network, this setting must be the same as the *Network Name* setting in the Communications Server *SNA Protocol Configuration*. For more information see Network Name on page 145.
Remote control point	TLX9500	If manually configuring the host controller description, the *Host Name* setting in the Communications Server configuration must match the *Remote control point* parameter. See Host Name on page 67. If the AS/400 controller description is automatically created when the Communications Server initially connects to the AS/400: The Communications Server *Host Name* setting (this must be the same as the *Local Control Point Name* in the IBM PCOMM configuration) is used to create this parameter.
Initial connection	*DIAL	
Dial initiation	*LINKTYPE	
Switched disconnect	*YES	
Data link role	*NEG	
LAN remote adapter address	400000000002	This is the physical address (MAC address) of the Communications Server network card.
LAN DSAP	04	

Parameter	Setting	Notes
LAN SSAP	04	
Text	*BLANK	

6.6.4 Device Description

This is a typical device description for an APPC device:

Parameter	Setting
Device description	TLX00004
Option	*BASIC
Category of device	*APPC
Automatically created	YES
Remote location	TLX00004
Online at IPL	*NO
Local location	TLXLCPN
Remote network identifier	*NETATR
Attached controller	BB9400
Message queue	QSYSOPR
Library	*LIBL
Local location address	00
APPN-capable	*YES
Single session	
Single session capable	*NO
Text	AUTOMATICALLY CREATED BY QLUS

6.6.5 Mode Description

The mode description specifies options for sessions connecting to the terminals.

This is a typical display mode description:

Parameter			Notes
Mode description	MODD	QPCSUPP	Each mode description can support up to 512 sessions. If the number of terminals in all host descriptions using this mode description exceeds 512, a different description will have to be used. In this event, you may copy QPCSUPP to a new mode description, and assign a different name to the mode description.
Class-of-service	COS	#CONNECT	

Parameter			Notes
Maximum sessions	MAXSSN	512	When configuring a mode description, ensure that the maximum number of sessions–MAXSSN–is at least as high as the number of terminals specified in the Communications Server *Host: General Options*. See Terminal range on page 59.
Maximum conversations	MAXCNV	512	When configuring a mode description, ensure that the maximum number of conversation– MAXCNV–is at least as high as the number of terminals specified in the Communications Server *Host: General Options*. See Terminal range on page 59.
Locally controlled sessions	LCLCTLSSN	0	
Pre-established sessions	PREESTSSN	0	
Inbound pacing value	INPACING	7	
Outbound pacing value	OUTPACING	7	
Maximum length of request unit	MAXLENRU	*CALC	
Data compression	DTACPR	*NETATR	
Inbound data compression	INDTACPR	*RLE	
Outbound data compression	OUTDTACPR	*RLE	
Text	TEXT	Client Access/400 mode entry	

7 ANSI/TELNET HOST CONFIGURATION

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7.1 Overview

The Communications Server manages the radio link, caches data going to and from the devices, and supervises the hand-off of devices as they move from one base to another.

Figure 7.1 Method 1

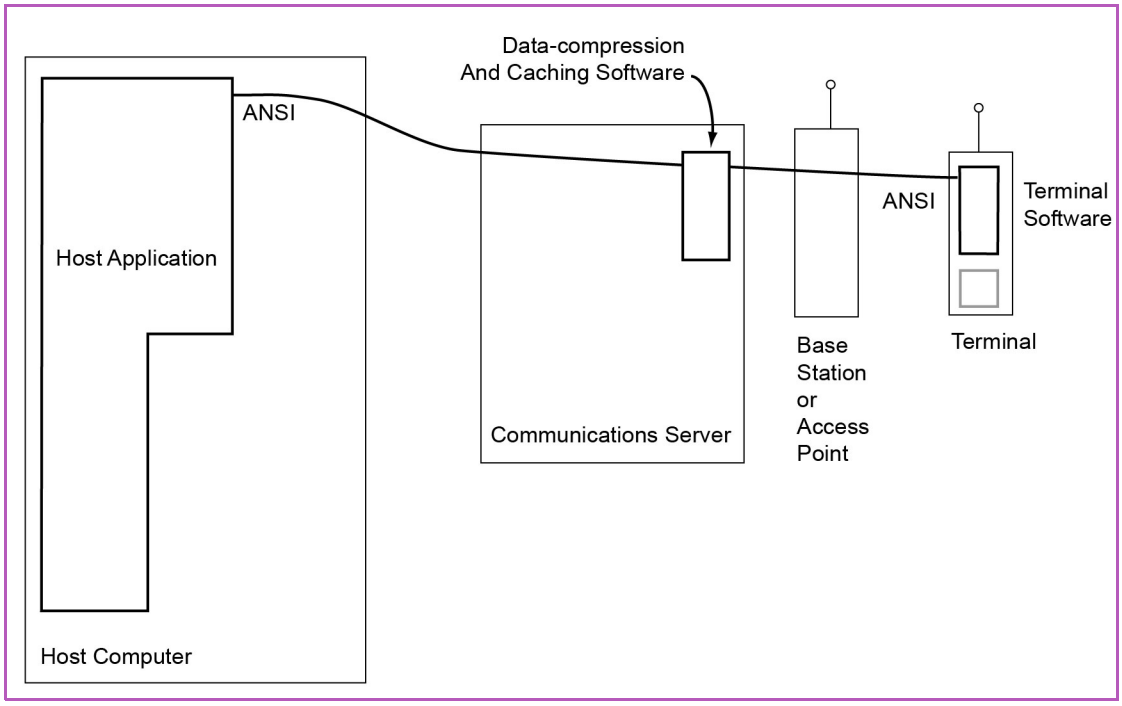
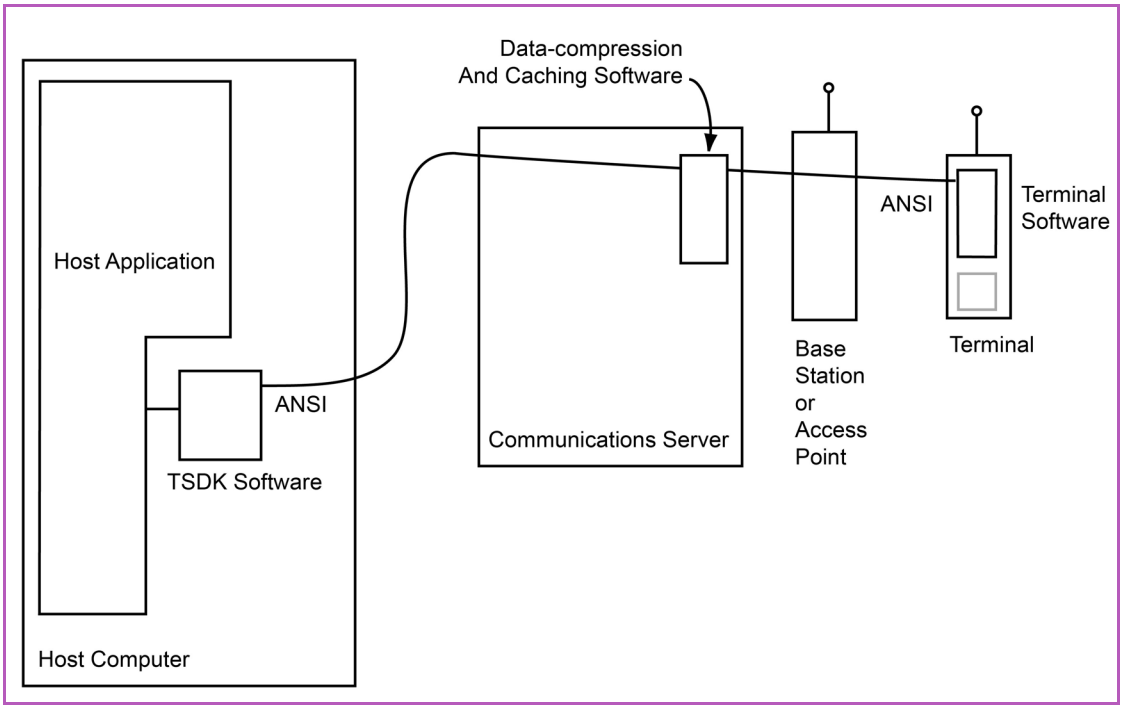


Figure 7.2 Method 2



7.2 General Host Options Screen

Field	Description
Name	The unique name of the host. Default: Unnamed Host
Enabled	When selected the host task is started when the Communications Server software starts.
Emulation and protocol	Emulation and protocol combination for this host. Select: **ANSI/Telnet**
Terminal range	Terminal number range that communicates with this host. Range: 1 to 3840. For S900L, SW9500L, and SW9510L range is 1 to 50. Default: 1 to 32 For information on selecting the terminal range see Chapter 21: "Setting Terminal Numbers on the General Host Options Screen"

7.3 ANSI Emulation Options Screen

Field	Description
Maximum Screen Size (rows x columns)	The maximum dimensions of the mobile device screen. These screen dimensions are used to reserve memory for screen caching when page saving is enabled. Rows: 4 to 60 Columns: 10 to 132 Default: 24 x 80
Host Timeout	When Page Saving is enabled, the host timeout in 60ths of a second. Values: 0 - 255 Default: 15
Escape Timeout	The escape timeout in 60ths of a second. This is the length of time that the Communications Server holds an **ESC** while waiting for another character. if another character is received within this time the pair of characters are treated as an escape sequence. If another character is not received within this time, the **ESC** is sent on to its destination. **Host to Terminal:** When enabled, if Page Saving is enabled, *Escape Timeout* is ignored, and dangling escapes are carried over to the next screen. When enabled, if Page Saving is not enabled, *Escape Timeout* applies. **Terminal to Host:** When enabled, the timeout is applied. Values: 0 to 255 Default: 12 It is recommended that this parameter be left at its default value.
Threshold	When Page Saving is selected, this is the minimum number of bytes that must be received from the host before the Communications server treats the data as a new saved page. Values: 0 to 999 Default: 200

Field	Description
Echo	When selected smart-echo is enabled. Smart echo reduces the amount of data sent to the mobile device by decreasing the number of radio transmissions. Ordinarily, when a character mode application is being used, each keystroke is sent to the host in one transmission, and the character is echoed by the host in another transmission. When smart echo is enabled, the Communications Server does not send the host echo to the mobile devices if it matches the data sent from the mobile device. Thus, the number of radio transmissions is reduced. This mode also reduces or eliminates the delay between typing a character on the keyboard and displaying the character echoed by the host. The maximum number of characters waiting for echo is 25. Any additional characters are sent to the host but not displayed. *Smart echo* must also be enabled on the mobile device. Default: Selected.
Function Key Remapping	When selected, the Communications Server remaps the function keys for this host connection as defined in the *ANSI Function Key and Arrow Key Mappings Options Screen*. Default: Not selected. For information on function key remapping see Function Keys on page 84.
Arrow Key Remapping	When selected, the Communications Server remaps the arrow keys for this host connection as defined in the *ANSI Function Key and Arrow Key Mappings Options Screen*. Default: Not selected. For information on arrow key remapping see Arrow Keys on page 84.
Page Saving	When selected, the Communications Server uses page saving, reducing data transmitted to the mobile devices. The Communications Server maintains an image of each page stored on the mobile device. After receiving an application screen, the Communications Server tries to match the screen with a stored page. If the page is already in the mobile device, the Communications Server instructs the mobile device to re-display its stored copy of the page; minimal data is sent across the radio link for that page. If the Communications Server finds no match for the page, the complete page is sent to the mobile device. If a page is close enough to a saved one (close enough being defined by the *Threshold* setting) then only the redisplayed, and the changed, data are sent, resulting in reduced data transmission. When page saving is enabled, the number of saved pages is that which is set on the mobile device. Refer to the appropriate user manual for details. Default: Selected.
Page Saving consider Double Byte Characters	When selected a double byte character half is replaced with a space, preventing problems with mobile device screen displays. While using double byte character sets (for example, Chinese or Korean), the page saving function can cause a double byte character to be partially overwritten. This can cause unprintable screen data and unintended characters; and may cause the mobile device to shift data on the screen. Select this checkbox only when using double byte character sets. Default: Not selected.

Field	Description
RLE	When selected, the Communications Server uses run-length encoding (RLE) on the data it sends across the radio link. RLE compresses repeated characters going from the host to the mobile device. If repeated characters are found in the data stream, the first one is sent, followed by a short escape sequence (3 or 4 characters) which tells the mobile device how many times to repeat this character. In this way RLE compresses the data and decreases the total amount of radio-link traffic. Default: Not selected.
Convert 7 to 8 Bits	When selected, the Communications Server converts 7-bit control sequences to their 8-bit equivalents in ANSI data streams going to the mobile devices. This replaces 7-bit two-character escape sequences with a single equivalent 8-bit character, compressing the data. For example, the escape sequence **ESC [** is converted to **CSI**. Default: Not selected.
Lower Character Set (GL)	This is the character set to be used for the first 128 character codes (decimal 0 to 127, hex 00 to 7F). This should be set to the same character set as selected in the mobile devices. This parameter is only used when page saving is enabled. Available character sets include: ASCII, DEC_Multi, DEC_Graphical, British_DEC, Danish_DEC, Dutch_DEC, Finnish_DEC, French_DEC, French_CDN_DEC, German_DEC, Italian_DEC, Portuagal_DEC, Spanish_DEC, Swedish_DEC, Swiss_DEC, Arabic, Thai, and a **Not Listed** selection. Default: ASCII
Upper Character Set (GR)	This is the character set to be used for the second 128 character codes (decimal 128 to 255, hex 80 to FF). This should be set to the same character set as selected in the mobile devices. This parameter is only used when page saving is enabled. Available character sets include: ASCII, DEC_Multi, DEC_Graphical, British_DEC, Danish_DEC, Dutch_DEC, Finnish_DEC, French_DEC, French_CDN_DEC, German_DEC, Italian_DEC, Portuagal_DEC, Spanish_DEC, Swedish_DEC, Swiss_DEC, Arabic, Thai, Latin_, Latin_2, Latin_3, Latin_4, Latin_5, Latin_6, Cyrillic_ISO, Arabic_ISO, Greek_ISO, Hebrew_ISO, and Thai_ISO. Default: DEC_Multi
Terminal Initialization Data	As soon as communication is established between a mobile device and the Communications Server, this string is sent to the mobile device. Default: None.
Host Initialization Data	As soon as communication is established between the host and the Communications Server, this string is sent to the host. Default: None.

7.4 ANSI Telnet Protocol Options Screen

Field	Description
Terminal Type	The type of terminal to be emulated by the Communications Server. Values: **VT100**, **VT220** Default: **VT100**
Host Port	The port number on the host for this connection. Values: 1 to 32767 Default: 23

Field	Description
Maximum Sessions per Terminal	The maximum number of Telnet connections that can originate from each mobile device. Values: 1 to 127 Default: 4
Close Host sessions on Terminal reset	When selected, all host sessions close when the mobile device resets. When not selected, the sessions remain open, if the mobile device resets. Default: Not selected.
First Local Terminal Port	The port number from which the Communications Server makes a Telnet connection for the first terminal. Additional Telnet sessions are assigned higher port numbers. Values 1 to 32767 Default: 10000 This parameter only takes effect if *Local IP Address to Bind* is specified. Do not set the first local terminal port to 16100. Port 16100 is used as a listening port by hosts using the 9010 protocol.
Local IP Address to Bind	The IP address of the Communications Server interface that connects to this host. It is used with the local port numbers to create a unique socket for each mobile device session. Default: 0.0.0.0
First Terminal Listen Port	The lowest port number on which the Communications Server listens for Telnet connections initiated by the host. When set to 0 (zero) this option is disabled. Values: 0 to 32767 Default: 0
TCP Session Request Key	Decimal value received from a mobile device to request a new session. You must ensure that this is the same value as that set on the mobile device. Values: 0 to 255 Default: 1
Session Cycle Key	Decimal value received from a mobile device to cycle through sessions. You must ensure that this is the same value as that set on the mobile device. Values: 0 to 255 Default: 2
Last Active Session Key	Decimal value received from a mobile device to return to the previous session. You must ensure that this is the same value as that set on the mobile device. Values: 0 to 255 Default: 5

Field	Description
Auto-telnet/login Enable	This list box enables the user to disable or enable automatic connection of Telnet sessions from mobile devices to this host. When auto-Telnet is disabled, Telnet sessions from the mobile devices to the host must be initiated manually from the mobile devices. When auto-Telnet is enabled, the Communications Server initiates one Telnet session from each mobile device whose terminal number is mapped to this host. Additional Telnet sessions may be initiated from each mobile device to the host, but they must be initiated manually. Auto-Telnet sessions are only initiated for mobile devices which are online (that is, turned on and operating properly on the RF network). When auto-Telnet and auto-login are enabled, the Communications Server initiates one Telnet session from each mobile device whose terminal number is mapped to this host. It then logs each session in to the host using the username and password provided in this screen. The username and password is identical for all auto-Telnet sessions automatically logged in to this host. Values: **DISABLE**; **AUTO-TELNET**; **AUTO-TELNET/LOGIN** Default: **DISABLE**
Auto-telnet Host	The name or the IP address of the host to which auto-Telnet requests are directed. Any host name which can be used at the **TCP>** prompt on the mobile device may be used here. Default: None. **Note:** The host name must be resolvable by the Communications Server: The Communications Server must be able to obtain an IP address for it. For example, the host name may correspond to an entry in the Communications Server host table, or the Communications Server may be able to query a domain name server.
Auto-telnet Terminal Prompt	The text presented to the user to request a login. Non-printable characters, such as are used in escape sequences, are allowed. These characters can be entered using either octal or hexadecimal digits. An octal escape sequence takes one of the forms: \0d or \0dd or \0ddd where each d can be any digit 0 to 7. A hexadecimal escape sequence takes one of the forms: \xh or \xhh where each h can be 0 to 9, or any of a to f or A to F. Each of these numeric escape sequences encodes one character. For example, the sequence **\033abc** becomes the character array {033,'a','b','c',0} Values: Any ASCII string. Maximum 60 characters Default: Press ENTER to login. Notes: If the octal ddd is greater than decimal 256, the code value of the represented character will be the remainder of decimal ddd/256. **\0** is considered as a character with a code value of 0.
Auto-login User ID	The user ID presented by the Communications Server to the host for the auto-login sessions. Values: Any ASCII string acceptable to the host. Maximum 15 characters. Default: None.

Field	Description
Auto-login Password	The password presented by the Communications Server to the host for the auto-login sessions. Values: Any ASCII string acceptable to the host. Maximum 15 characters. Default: None.
Auto-login User ID prompt	The Communications Server compares this text to the text presented to it by the host. When they match, the Communications Server assumes that the host has just sent its request for a user name, and it sends the username specified in *Auto-login User ID* to the host. Values: Any ASCII string that does not include spaces. Maximum 15 characters Default: **gin:** **Notes:** The match string should be as short as possible, yet long enough to uniquely identify the user-ID prompt.
Auto-login Password prompt	The Communications Server compares this text to the text presented to it by the host. When they match, the Communications Server assumes that the host has just sent its request for a password, and it sends the password specified in *Auto-login Password* to the host. Values: Any ASCII string that does not include space characters. Maximum 15 characters. Default: **word:** **Notes:** The match string should be as short as possible, yet long enough to uniquely identify the password prompt.
Auto-login failed login	The Communications Server compares this text to the text presented to it by the host. When they match, the Communications Server assumes that the host has just sent a string informing the mobile device of a failed login attempt. The Communications Server then presents the Auto-telnet Terminal Prompt on the mobile device's screen to request the user to login manually. Values: Any ASCII string that does not include spaces. Maximum 15 characters Default: **incorrect** **Note:** The match string should be as short as possible, yet long enough to uniquely identify the failed-login prompt.
Auto-telnet Without User Action	When selected, the PRODUCT NAME attempts to connect to the host as soon as a mobile device initializes, and it attempts to reconnect if the Telnet session closes. Default: Not selected.
Auto-telnet Without User Action Timing Delay	The number of milliseconds between auto-Telnet connection requests sent to the host. All requests to connect without user action are queued and are processed with this delay between requests. This prevents flooding the host with connection and logins when the Communications Server starts or is reset. Values: 0 to 999 Default: 25
Maximum of Auto-telnet Retries	The number of times the Communications Server attempts to connect to a host if the host does not respond. If this parameter is zero, the Communications Server attempts to connect forever. Values: 0 to 999 Default: 0

Field	Description
Allow TCP Sessions	When selected, sessions requested by the mobile device can be either auto-login or TCP sessions. At the prompt of a TCP session, the operator can specify the desired host to connect to, and provide username and password. When not selected, and *Auto-telnet/login Enable* is selected, all sessions requested by the mobile device to this host emulation are Auto-Login sessions. On the mobile device, **CTRL+A** requests a new session, **CTRL+B** changes to the next available session, and **CTRL+E** changes to the last available session. Default: Selected.

7.5 ANSI Function Key and Arrow Key Mappings Options Screen

Function Keys

Each of the function key text boxes contains a code that is sent to the host when the corresponding function key is pressed on the mobile device.

Each code sequence is terminated by a NULL. NULLs are not transmitted by the Communications Server.

Arrow Keys

Each of the arrow key text boxes contains a code that is sent to the host when the corresponding arrow key is pressed on the mobile device.

Arrow key remapping also exists on the mobile devices, but is applicable only to Telnet direct connections.

Function-key remapping and arrow-key remapping can be enabled, and operate, independently of each other.

Arrow key sequences sent from the mobile device can be switched between *Application* mode and *Cursor Key mode* by the *DECCKM* command sent by the host. The sequences ares **CSI?1h** and **CSI?1l**. There is also a local parameter on the mobile device that can select the mode.

The default arrow key sequences (in Psion ANSI debug format) are:

In Cursor-Key Mode	7-Bit	8-Bit
Up arrow	(1b)[A	(9b)A
Down arrow	(1b)[B	(9b)B
Right arrow	(1b)[C	(9b)C
Left arrow	(1b)[D	(9b)D
In Application Mode	**7-Bit**	**8-Bit**
Left arrow	(1b)OA	(8f)A
Right arrow	(1b)OB	(8f)B
Up arrow	(1b)OC	(8f)C
Down arrow	(1b)OD	(8f)D

These sequences are remapped by the Communications Server to 4 configurable sequences, each a minimum of 5 hexadecimal characters long. A null entry terminates the map-to sequence; it is not necessary to transmit nulls.

The default values for arrow key mappings are the 7-bit Cursor key Mode values. The Communications Server recognizes both the 7-bit and the 8-bit forms of the key sequences.

The same escape timeout applies to arrow key remapping as to function key remapping.

The *cursor key mode* setting in the mobile device is not considered by the Communications Server. If the host changes the key sequence using **DECCKM**, the Communications Server continues to remap the new key sequences: With arrow key mapping enabled, **DECCKM** has no net effect.

7.6 Host Configuration

The host should be configured to work with ANSI VT-100, or ANSI VT-220, terminals.

8 9010/TELNET HOST CONFIGURATION

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8.1 General Host Options

Field	Description
Name	The unique name of the host. Default: Unnamed Host
Enabled	When selected the host task is started when the Communications Server software starts.
Emulation and protocol	Emulation and protocol combination for this host. Select: **9010/Telnet**
Terminal range	Terminal number range that communicates with this host. Range: 1 to 3840. For S900L, SW9500L, and SW9510L range is 1 to 50. Default: 1 to 32 For information on selecting the terminal range see Chapter 21: "Setting Terminal Numbers on the General Host Options Screen"

8.2 9010 Emulation Options

Field	Description
Refrain from sending On-line & Off-line messages	Narrow band and 802.IQ v1 only. When selected the Communications Server does not forward terminal-offline and terminal-online messages from the base station to the host. Default: Not selected.

8.3 9010 Protocol Options Screen

9010/Telnet Options

Field	Description
Monitor Polls	When selected, the Communications Server monitors messages and polls from this connection. Hosts usually send messages or null polls to the Communications Server with a period of approximately 40 seconds. If the Communications Server does not receive a message or poll within 40 seconds, it closes the connection. Default: Not selected. **Note:** For older Unix handlers (hosts), this parameter should be deselected. In all other cases, this parameter should be selected.

9 2392/TELNET HOST CONFIGURATION

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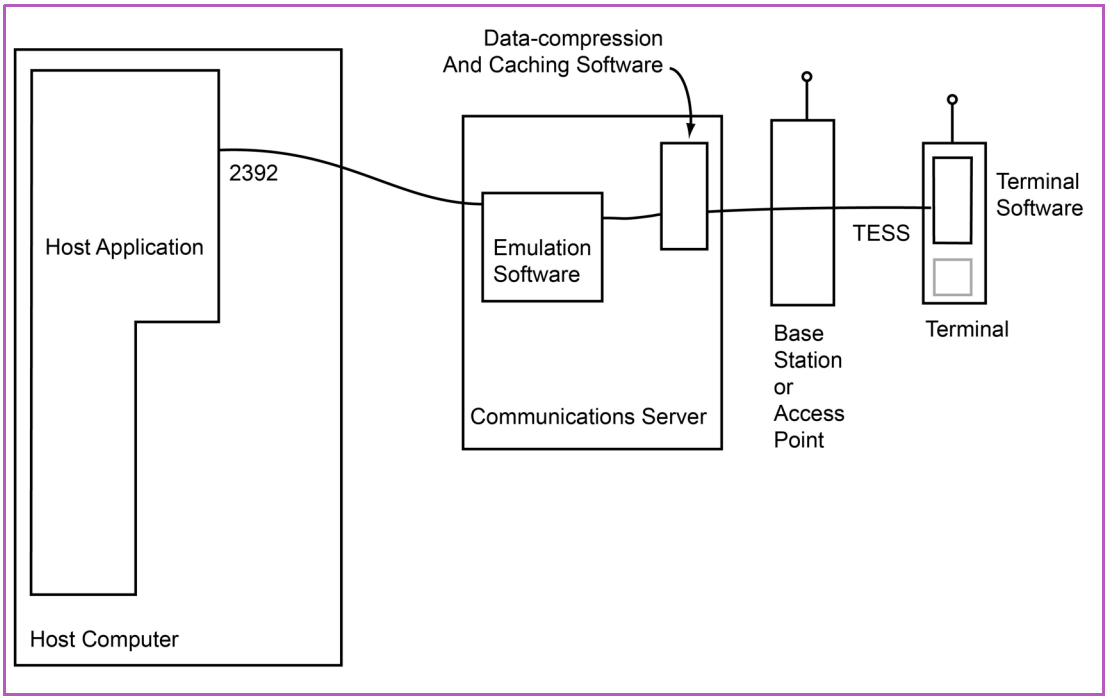
9.1 Overview

The Communications Server can emulate HP2392A display terminals—asynchronous terminals capable of character, line and block mode. These terminals also handle ANSI terminal commands.



9.2 General Host Options

Field	Description
Name	The unique name of the host. Default: Unnamed Host
Enabled	When selected the host task is started when the Communications Server software starts.
Emulation and protocol	Emulation and protocol combination for this host. Select: **2392/Telnet**
Terminal range	Terminal number range that communicates with this host. Range: 1 to 3840. For S900L, SW9500L, and SW9510L range is 1 to 50. Default: 1 to 32 For information on selecting the terminal range see Chapter 21: "Setting Terminal Numbers on the General Host Options Screen"

9.3 2392 Emulation Options Screen

9.3.1 2392 Options

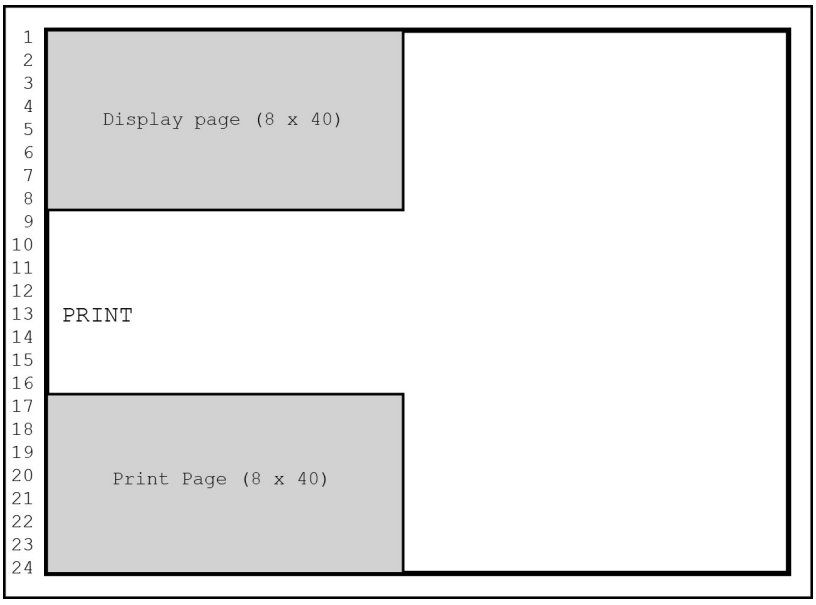
Field	Description
Send CR with FKEY	When selected a Carriage Return is sent after each function key. Default: Not selected.
Display Timeout	Time, in mSec, that the Communications Server waits for more data from the host. Screen data from a 2392 host can be divided into chunks. If no more data is received by the Communications Server before this time has elapsed, the communications Server forwards the screen data received so far to the mobile device. Values: 50 to 5000 Default: 300

9.3.2 TESS Options

Field	Description
Alarm	When selected, mobile devices beep when the word **ALARM** appears on the application screen, in the location specified by the *Command Region* setting. The word **ALARM** should be a display-only field. *Command Region* must also be set. Default: Not selected.
Clear	When selected, the Communications Server creates an empty entry field for an entry field that is filled with spaces. Default: Not selected.

Passthru	When selected, the Communications Server allows the host to send data directly to the serial port of the mobile device. This is commonly used for printing.
	Preparing Host Screens for Pass-Through:
	On the screen to be sent through the mobile device serial port, the word **PASSTHRU** has to appear on the first line, starting in the second column. The actual data to be sent to the mobile device may start anywhere below the first line.
	Attributes occupy a position in the screen buffer. An attribute placed between column 2 and the end of the word **PASSTHRU** will push all following characters one position to the right. Therefore, any required attributes should occupy column 1 of the first line (just preceding the word **PASSTHRU**).
	For example:
	`column: 1 2 3 4 5 6 7 8 9`
	`line 1: @ P A S S T H R U @`
	`line 2: @ P A R T :  1 2 3 4 5`
	where @ is an attribute.
	When the Communications Server is finished sending the data to the printer attached to the mobile device, it sends a packet containing only a Record Separator (0x1e) character to the host. The host must wait for this packet before sending any more screens (including other PASSTHRU screens) to the mobile device.
	Refer to the user manual for the mobile device for information about setting parameters on the mobile device for pass-through.
	Default: Not selected.

Field	Description
Procedures	Legacy setting. The last device to support this is the 7030. When selected, the Communications Server can send TESS procedures to the mobile devices. A TESS procedure is a group of TESS commands that can be executed by the TESS execute procedure command. Default: Not selected.
Local	Legacy setting. The last device to support this is the 7030. When selected, the Communications Server can provide pages to be loaded as local TESS procedures in the mobile devices. The local procedures are selected from a menu on the mobile device. The mobile device can perform these procedures when it is offline. Later when the mobile device is online, it sends the results of these functions to the host. *Procedures* must also be selected. Default: Not selected.
TSF/O	When selected, the Communications Server uses Psion Teklogix Screen-Formatter/Optimizer software (TSF/O). Default: Not selected.

Field	Description
Host Print	When selected, an application can send data to the display on the mobile device as well as to its attached printer. The text that is passed to the printer is formatted into a 24 x 80 application screen. If the host can initiate the print operation, the text is printed. The Communications Server identifies the additional text as a print page by the presence of the string **PRINT** beginning in the 2nd column of line 13 on the 24 x 80 screen. **PRINT** should be defined as display-only text. The print page is positioned below the display page of the mobile device (see the following diagram). The size of the print page is always the same as the display page of the mobile device (assuming that in the mobile device configuration, the page length is less than 12 lines). When *Host Print* is enabled, the Communications Server passes the print page to the mobile device after receiving the application screen from the host.  Unlike with the *Passthru* option, when using *Host Print* no escape commands can be sent to the printer. Support for printing must be enabled on the mobile device; refer to the appropriate user manual for the mobile device for more information Default: Not selected.
Remote Print	When enabled, the Communications Server sends the print page to a mobile device whenever the mobile device requests it (by sending the F17 function key from the mobile device, or the **PRINT** key on older mobile devices). The Communications Server sends the function response back to the host. Support for printing must be enabled on the mobile device; refer to the appropriate user manual for the mobile device for more information. Default: Not selected.

Field	Description
Pages	The number of host screens (or pages) stored on the mobile device. The Communications Server maintains an image of each page stored on the mobile device. After receiving an application screen, the Communications Server tries to match the screen with a stored page. If a similar page is already in the mobile device memory, the Communications Server instructs the mobile device to re-display its copy of the page; only the necessary changes are sent from the Communications Server. If no match is found, the complete page is sent to the mobile device. There is a corresponding parameter on the mobile device itself, and the actual number of saved pages is the smaller of the two values. A value of 1 (one) disables this feature. Values: 1 to 79 Default: 8
Transmit Line	When enabled, all modified data on the mobile device is automatically transmitted when the operator enters data into an entry field on or above this line. The value in this text box specifies the line on the screen which is designated as the transmit line. The last entry field on or above the transmit line on the screen is identified as the field which will cause all modified data to be sent to the host. Any entry fields that exist on lines below the transmit line will not cause the screen to be transmitted. A value of 0 (zero) disables this feature. A value of 24 causes the last entry field on each application screen to be defined as transmit-upon-entry. Values: 0 to 24 Default: 0
AIAG	The decimal value of the special character (ASCII) used to tag a field to use AIAG mode. When barcode data is entered on a mobile device, the mobile device searches for AIAG fields on the current page. These fields can accept the special barcode data. The data preloaded into the AIAG field by the application program determines whether a barcode is accepted. The format of the preloaded data is: <mode><AIAG prefix> The application program distinguishes an entry field as AIAG by preceding the entry field with this special AIAG character. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0 For the AIAG mode character table see AIAG Mode Values on page 100.

Field	Description
Visible Match Character	The decimal value of the special character (ASCII) used to tag a field to use visible match mode. With field matching, the host computer preloads data into an entry field. Now the mobile device operator can make an entry that matches this preloaded data. For visible match fields, the preloaded data is displayed in the entry field on the mobile device. The application program distinguishes an entry field as a match field by preceding it with a special character. The special character is entered as the decimal character code for one of the first 127 ASCII characters. For example, assume that the **>** character (ASCII decimal character code 62) is defined for visible match fields. This character must immediately precede the entry field: **Part #>_____** The field: **Part #>** includes the character **>** and is followed by the part number entry field on the screen. If any other character was chosen as the last character of the text, the entry field would not be a match field. The preloaded data sent to a mobile device may consist of the exact characters, special match characters or a combination of the two. For example, suppose you wish to preload an entry field with a part number. If the exact part number is known, you may preload the field with that part number. If more flexibility is required, and part numbers always begin with two alphabetic characters followed by a hyphen character and four digits, then the match string for the field could be: **&&-####**. If an entry is different from the preloaded data, the entry is displayed, the mobile device beeps and the cursor is in the first position of the match field. Now either another entry in the match field can be made, or the cursor can be moved to a new field. When an entry (even if it does not match the host preloaded data) is made in a match field, this entry is sent to the host as part of the modified data from the mobile device during the next transmission. A value of 0 (zero) disables this match field feature. Values: 0 to 255 Default: 0 For the Psion match characters see Match Characters on page 100.
Hidden Match Character	The decimal value of the special character (ASCII) used to tag a field to use hidden match mode. A special character is used to mark Hidden Match fields in a TESS screen. This character precedes the field contents of the Hidden Match field. In hidden match fields, as opposed to visible match fields, the preloaded entry is not displayed in the entry field on the mobile device). A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0 For the Psion match characters see Match Characters on page 100.

Field	Description
Serial I/O	The decimal value of the special character (ASCII) used to tag a field to use serial I/O mode. Serial I/O fields are special entry and fixed fields that accept input from, and output to, a serial port. The application program distinguishes this field as Serial I/O by preceding the field with a special character. If this character precedes a fixed field, the data is sent to the serial port of the mobile device. If it precedes an entry field, the field accepts data from the serial port of the mobile device. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0
Print Line	The starting line number of the print page on the application screen. A value of 1 (one) causes the display page to be printed. A value of 0 (zero) disables this feature. Values: 0 to 24 Default: 0
Print Form Length	The printer form length, in lines. Values: 0 to 24 Default: 0
Barcode	The decimal value of the special character (ASCII) used to tag a field to use barcode only mode. Barcode-input-only fields are special entry fields that only accept input from a barcode reader. The application program distinguishes an entry field as barcode-input-only by preceding the field with a special character. A value of 0 (zero) disables this feature. Values: 0 to 255 Default: 0
Entry Line	The number of the first line displayed if there is no entry field above this line on the screen and if an entry field is at or below this line. The Entry Line parameter allows an automatic offset within the host screen. Normally, Psion mobile devices only display the upper left corner of the application screen because of their smaller display size. Values: 0 to 24 Default: 0
Field Overhead	The maximum number of characters allowed between two fixed fields which still allows the Communications Server to join them into one field. Sometimes the Communications Server will join two adjacent fixed fields and then send them as one field. This reduces the overhead on the radio link. For example, if two fields were 4 characters apart and this parameter was 5, then these fields would be joined into one. This feature affects fields with the **Normal** display attribute only. Values: 0 to 80 Default: 5

Field	Description
Command Region	These two pairs of text boxes define a region of the host screen which the Communications Server examines for the presence of reserved commands. The first text box of each pair contains the row number; the second contains the column number. These four numbers represent the row and column addresses of the upper left corner and the lower right corner of the command region. To define the last two lines of the host screen as the command region, for example, enter **23, 1 - 24, 80** The only commands supported in the command region are *ALARM* and *FONT*: • When the word **ALARM** is placed anywhere within the command region, the Communications Server sends a TESS beep command to the mobile device. • When the word **FONT** is placed anywhere within the command region, and followed by a number (the font code), the Communications Server sends the appropriate TESS Change Font command to the mobile device. For font codes see Font Code List for Open TekTerm on IngenuityWorking. Font codes are only required for versions of OTT before version D. Rows: 0to 24 Columns: 0to 80 Default: 0, 0 - 0, 0

AIAG Mode Values

The mode character is derived by starting with the decimal value 48—ASCII character 0 (zero)—and adding the appropriate value from the table below.

Code	Description
1	Prevent the AIAG prefix from being displayed.
2	Prevent the AIAG prefix from being sent to the host.
4	Cause a transmission to the host when all AIAG fields with this mode set are filled. The transmission is sent by a Function 0 (F0) code.
8	Allow overwriting of previously entered data.
16	Start the search for a matching AIAG field at the current cursor position. Otherwise, the cursor starts at the top of the page.

For example, the @ symbol is used to apply the cursor matching function, since adding 16 to 48 results in decimal value 64, which is the ASCII value for the character @.

Match Characters

Match Character	Use
#	Match a number
&	Match a letter (either case)
^	Match an upper case letter
_	Match a lower case letter
|	Match an alphanumeric character
"	Match a letter, number or space
?	Match a punctuation character
'	Match any character

Match Character	Use
:	Match all character positions in the field with the preceding character
;	Match any remaining characters, but not necessarily the remainder of the field, with the preceding character

9.4 2392 Telnet Protocol Options Screen

Field	Description
Host Port	The port number on the host for this connection. Values: 1 to 32767 Default: 23
Maximum Sessions per Terminal	The maximum number of Telnet connections that can originate from each mobile device. Values: 1 to 127 Default: 4
First Local Terminal Port	The port number from which the Communications Server makes a Telnet connection for the first terminal. Additional Telnet sessions are assigned higher port numbers. Values: 1 to 32767 Default: 10000
Local IP Address to Bind	The IP address of the Communications Server interface that connects to this host. It is used with the local port numbers to create a unique socket for each mobile device session. Default: 0.0.0.0
First Terminal Listen Port	The lowest port number on which the Communications Server listens for Telnet connections initiated by the host. When set to 0 (zero) this option is disabled. Values: 0 to 32767 Default: 0
Auto-telnet/login Enable	When enabled, the host connection is automatically selected by the *Auto-telnet Host* parameter. When disabled, Telnet sessions from the mobile devices must be manually initiated. Values: DISABLE, AUTO-TELNET Default: DISABLE
Auto-telnet Host	The name or the IP address of the host to which auto-Telnet requests are directed. Any host name which can be used at the **TCP>** prompt on the mobile device may be used here. Default: None. **Note:** The host name must be resolvable by the Communications Server: The Communications Server must be able to obtain an IP address for it. For example, the host name may correspond to an entry in the Communications Server host table, or the Communications Server may be able to query a domain name server.
Auto-telnet Without User Action	When selected, the Communications Server attempts to connect to the host as soon as a mobile device initializes, and it attempts to reconnect if the Telnet session closes. Default: Selected.

10 RF MODEM/TELNET HOST CONFIGURATION

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10.1 General Host Options Screen

Field	Description
Name	The unique name of the host. Default: Unnamed Host
Enabled	When selected the host task is started when the Communications Server software starts.
Emulation and protocol	Emulation and protocol combination for this host. Select: **MODEM/Telnet**
Terminal range	Terminal number range that communicates with this host. Range: 1 to 3840. For S900L, SW9500L, and SW9510L range is 1 to 50. Default: 1 to 32 For information on selecting the terminal range see Chapter 21: "Setting Terminal Numbers on the General Host Options Screen"

10.2 Telnet Protocol Options Screen

Field	Description
First Terminal Listen Port	The lowest port number on which the Communications Server listens for Telnet connections initiated by the host. When set to 0 (zero) this option is disabled. Values: 0 to 32767 Default: 0

11 HTML HOST CONFIGURATION

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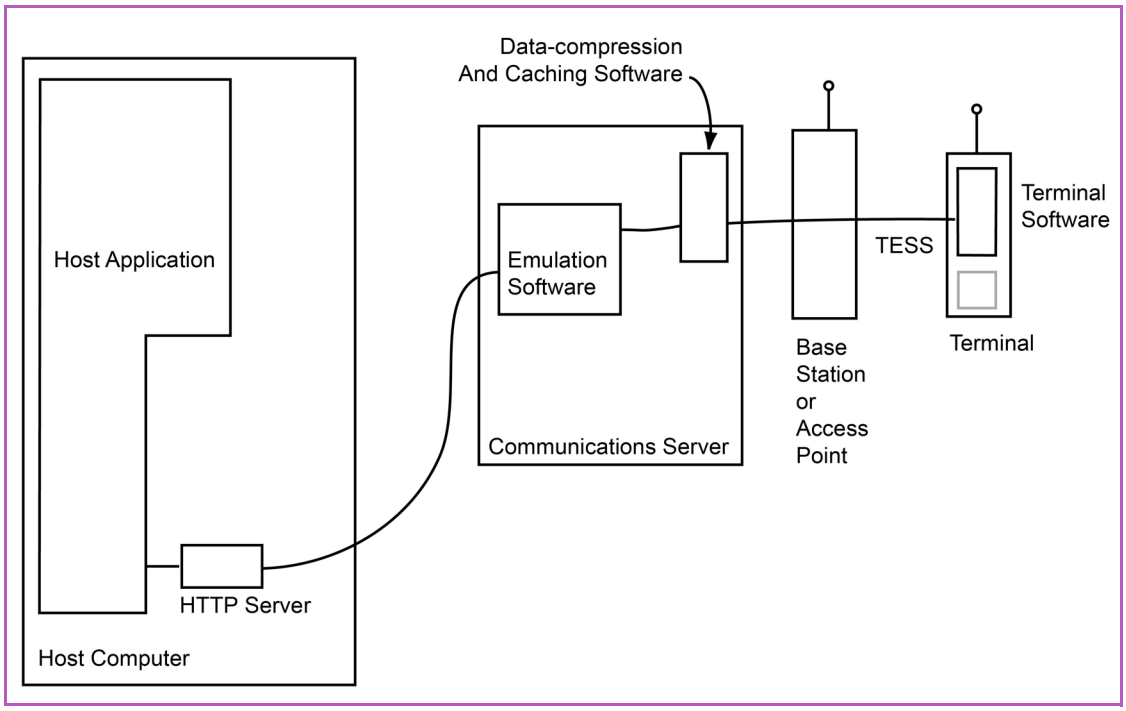
11.4 HTML Function Key Mappings Screen 111

11.1 Overview

The HTML emulation converts HTML pages, received from the host, into TESS data streams which are transmitted to the Psion mobile devices. A limited set of HTML elements and attributes is supported by the TekHTML emulation on the 9500 series Communications Servers. For information on developing TekHTML documents see TekHTML Support on 9500 Series Communications Servers on IngenuityWorking:



11.2 General Host Options Screen

Field	Description
Name	The unique name of the host. Default: Unnamed Host
Enabled	When selected the host task is started when the Communications Server software starts.
Emulation and protocol	Emulation and protocol combination for this host. Select: **HTML**
Terminal range	Terminal number range that communicates with this host. Range: 1 to 3840. For S900L, SW9500L, and SW9510L range is 1 to 50. Default: 1 to 32 For information on selecting the terminal range see Chapter 21: "Setting Terminal Numbers on the General Host Options Screen"

11.3 HTML Emulation Options Screen

11.3.1 HTML Options

These settings configure the TekHTML emulation on the Communications Server.

Field	Description
Screen Size (row x col)	The number of lines on the mobile device screen, and the number of characters in each line. If you enter an invalid range, an error message results. Changes are not written to the database, and you can enter a valid range. Rows: 3 to 24 Columns: 2 to 80 Default: 24 x 80
Start Page	The web address (or URL) of the start page of the HTML emulator. The Communications Server retrieves this page, parses it into TESS, and sends the TESS data stream by default to each mobile device. If the Communications Server cannot retrieve the start page, it sends a simple page to the mobile device containing a link to the start page. The user can then request the start page later by following the link. display size. The scheme (the **http://** part) must be provided with the web address of the start page. The TekHTML emulator expects it, and does not provide it, if it is not specified. The mobile device requests the start page when the user presses the **Home** function key. Default: http:// See Home on page 111 for information on selecting the **Home** function key.
Character Width on the terminal [in Pixels]	The width in pixels of a single character on the mobile device screen. The emulator uses this width value when formatting web pages to fit the mobile device screen. Values: 1 to 10 Default: 8
Ignore in Preformatted Blocks	When selected line breaks, tags, inside <PRE> blocks are ignored by the Communications Server. Default: Selected.
Return Pre-Filled Data to Host	When selected data that is pre-filled in entry fields is returned to the host even if it is not modified. Default: Selected.

11.3.2 TESS Options

Field	Description
Passthru	When selected, the Communications Server allows the host to send data directly to the serial port of the mobile device. This is commonly used for printing. Passthru is implemented using attributes on the **BODY** element specific to Psion. See TekHTML Support on 9500 Series Communications Servers on IngenuityWorking for information. Default: Not selected.
TSF/O	When selected, the Communications Server uses Psion Teklogix Screen-Formatter/Optimizer software (TSF/O). Default: Not selected.

Field	Description
Pages	The number of host screens (or pages) stored on the mobile device. The Communications Server maintains an image of each page stored on the mobile device. After receiving an application screen, the Communications Server tries to match the screen with a stored page. If a similar page is already in the mobile device memory, the Communications Server instructs the mobile device to re-display its copy of the page; only the necessary changes are sent from the Communications Server. If no match is found, the complete page is sent to the mobile device. There is a corresponding parameter on the mobile device itself, and the actual number of saved pages is the smaller of the two values. A value of 1 (one) disables this feature. Values: 1 to 79 Default: 8
Transmit Line	When enabled, all modified data on the mobile device is automatically transmitted when the operator enters data into an entry field on or above this line. The value in this text box specifies the line on the screen which is designated as the transmit line. The last entry field on or above the transmit line on the screen is identified as the field which will cause all modified data to be sent to the host. Any entry fields that exist on lines below the transmit line will not cause the screen to be transmitted. A value of 0 (zero) disables this feature. A value of 24 causes the last entry field on each application screen to be defined as transmit-upon-entry. Values: 0 to 24 Default: 0
Field Overhead	The maximum number of characters allowed between two fixed fields which still allows the Communications Server to join them into one field. Sometimes the Communications Server will join two adjacent fixed fields and then send them as one field. This reduces the overhead on the radio link. For example, if two fields were 4 characters apart and this parameter was 5, then these fields would be joined into one. This feature affects fields with the **Normal** display attribute only. Values: 0 to 80 Default: 5

11.4 HTML Function Key Mappings Screen

These settings change the default function key associated with actions on the Psion mobile devices. These settings cannot be overridden by settings in a TekHTML document.

Field	Description
Home	The function key which requests the default page. In TekHTML browser emulation, this requests the Start Page. See Section 11.3.1 HTML Options on page 110 for information.
Back	The function key which requests the previously-viewed page.
Forward	The function key which requests the next page. This feature only works if the **Back** function key has been pressed.
Reset	The function key which resets the connection between the mobile devices and the Communications Server.

Field	Description
Use Submit Button Labels for Function Key ID	When selected, the submit button labels are used to determine the function key that is submitted.
Submit Button Label for Enter Key	The text corresponding to the label on an on-screen button. This button is processed in the same way as the **ENTER** key.

12 REMOTE SOCKET EMULATION HOST CONFIGURATION

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12.4 Mobile Device Narrow Band Configuration for Remote Sockets 116
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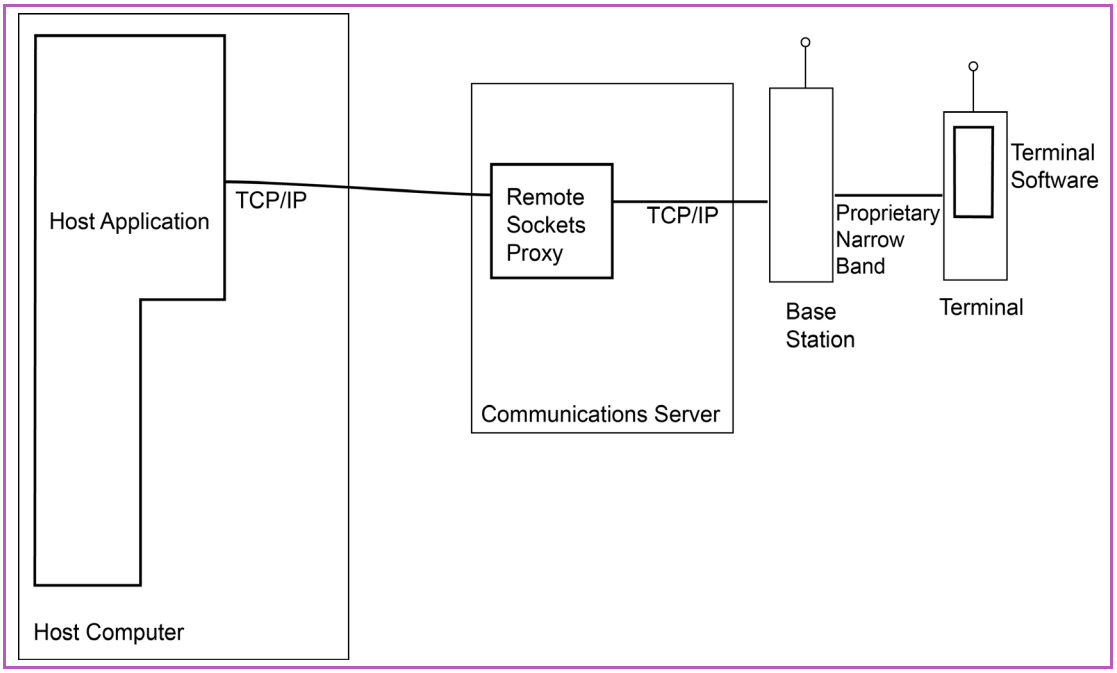
12.1 Overview

The Remote Sockets Emulation enables communication between a Psion computer using a narrow band radio and a host on a TCP/IP network. Implementing remote sockets requires a Communications Server. The Communications Server provides the socket connections to the TCP/IP network for applications running on a mobile device with a narrow band radio.



Each application on the mobile device makes one or more connections through the narrow band system to the network. Each connection is treated as a separate terminal on the narrow band system.

Narrow band radios are available on the following mobile devices:

- 7530 and 7530 G2
- 8525 and 8525 G2
- 8530 and 8530 G2

Remote Sockets with the Mobile Devices SDK

The Remote Sockets APIs in the Mobile Devices SDK can be used to create an application on the mobile device. This application sends commands to the Communications Server which acts as a socket proxy and creates a TCP socket connection to the host. The host application manages the data connection.

- For a Windows CE .NET 4.2 mobile device use version 2.02 of the Mobile Devices SDK.
- For a Windows CE 5.0 mobile device use the latest version of the Mobile Devices SDK.

12.2 General Host Options Screen

Note: Use of overlapping terminal ranges is not recommended for the Remote Sockets emulation.

Field	Description
Name	The unique name of the host. Default: Unnamed Host
Enabled	When selected the host task is started when the Communications Server software starts.

Field	Description
Emulation and protocol	Emulation and protocol combination for this host. Select: **Remote Socket Emulation**
Terminal range	Terminal number range that communicates with this host. Range: 1 to 3840. For S900L, SW9500L, and SW9510L range is 1 to 50. Default: 1 to 32 For information on selecting the terminal range see Chapter 21: "Setting Terminal Numbers on the General Host Options Screen"

12.3 Other Communications Server Settings Associated with Remote Sockets

The following must also be configured on the *Radio Link Features* screen:

- *Operate in Cellular Mode* must be selected.
- Optionally an *Automatic Radio Address assignment range* can be set.
- *Automatic Terminal Number Assignment* must be implemented.

For details see Chapter 15: "Radio Link Features Configuration".

12.4 Mobile Device Narrow Band Configuration for Remote Sockets

There are no parameters specific to remote sockets on the mobile device. The narrow band radio must be configured to communicate with the base station. For information on configuring narrow band radios see Narrow Band Polling Protocol Parameter Settings on IngenuityWorking.

12.5 Base Station Narrow Band Configuration for Remote Sockets

There are no parameters specific to remote sockets on the base stations; however, the base stations or RRMs require configuration.

13 BASE STATION CONFIGURATION

13.1 Overview 119
13.2 General Options Screen 119
13.3 Connectivity Options: TCP/IP Options for Base Station Screen 119

13.1 Overview

The parameters in this section control access points and narrow band base stations.

13.2 General Options Screen

Field	Description
Name	The name for the base station. Values: Any text string. Default: Unnamed Base Station
Protocol	The protocol to be used for the connection to this base station. Values: TCP/IP Default: TCP/IP
First Terminal	The Communications Server terminal number that is mapped to the Psion device with *Terminal ID* = 1 that communicates with this base station. Values: 1 to 3840. For S900L, SW9500L, and SW9510L: 1 to 50. Default: 1 For information on selecting this value for non standard configurations see 9500 Series Communications Servers: Setting Terminal Numbers on the Base Station General Options Screen on IngenuityWorking:
Message Size	The size (in number of characters) of the largest single message that can be passed to a device in a single packet. Longer messages are broken into several packets. Values: Legacy (900Mhz and 2.4 GHz) Wireless LAN protocol: 32 to 380 Values: Narrow band protocol: 32 to 116 Default: 100 **Note:** Operate in Cellular Mode must be selected. See the *Radio Link Features Screen*, Section 15.2.1 General Options on page 131 for more information.
Auto-Startup	When selected, the Communications Server commands the base station to start polling as soon as the base station connection has been established. Default: Selected. **Note:** If the Communications Server is configured as a slave controller, the *Auto Startup* parameter should be disabled.

13.3 Connectivity Options: TCP/IP Options for Base Station Screen

Field	Description
IP Address	The IP address and port number for the base station. Values: IP address: Any valid IP address. Values: Port number: 1024 to 32767 Default: IP Address: 0:0:0:0; Port: 16100 **Note:** The only time that the default port needs to be changed is when the communications server is the slave of another communications server.

14 RRM GROUPS CONFIGURATION

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14.1 Overview

The remote radio module (RRM) controls narrow band systems that require timeplexing. In such systems, the Communications Server controls the poll timing of the radio links on the bases.

The RRMs in each group transmit, in turn, on the same frequency. The Communications Server coordinates the transmissions so that no RRMs transmit at the same time. This differs from base stations, where the timing of the radio transmissions is controlled only by the base stations themselves.

RRM groups and RRMs use narrow band FM radios. The performance of such groups depends critically on the interaction between the radio parameters. Psion provides a parameter-analysis utility to help you to set up the groups. This utility is described in Section 14.4 Analyze Screen: Analyze RRM Group Screen on page 125.

Each RRM must be a member of an RRM group; there may be more than one RRM group configured on the Communications Server. An RRM group may contain only one RRM, and may contain a maximum of four RRMs.

14.2 General Options Screen: Configure RRM Group Screen

This screen is used to configure a named RRM group, and to list the terminals that are included in the RRM group.

14.2.1 General Options Parameters

Field	Description
Name	The name of an RRM group. Default: Unnamed RRM Group.
Communication Protocol	The protocol to be used for the connection to this RRM group. Values: TCP/IP Default: TCP/IP
Enabled	When selected, this RRM group is active. Default: Selected.
Auto-Startup	When selected, the Communications Server starts polling this RRM group as soon as it starts up. Default: Selected.

14.2.2 Polling Protocol Parameters

Warning: ***The default settings for the parameters in this section are suitable for almost all situations. It is not advisable to make changes to them.***

Field	Description
Number of Poll Windows	The number of poll windows in which the RRM listens for terminal responses after sending a poll. Values: 2 to 4 Default: 3
Size of Poll Windows	The size of the poll windows in which the RRMs of this RRM group listen for terminal replies. Values: 5 to 32 Default: 8

Field	Description
Maximum Message Segment Size	The size of the largest message segment, in bytes, that will be sent over the Psion radio network. Larger messages are broken into parts. Values: 32 to 116 Default: 100
Number of Retries	The number of times the RRM retransmits a message to a terminal, after receiving no acknowledgement from the terminal, before it declares the terminal offline. Values: 1 to 7 Default: 3
Collision Size	The smallest number of characters of noise received by the RRM, that will be interpreted as interfering transmissions from Psion other equipment. When this threshold is exceeded, the RRM starts collision resolution. Values: 3 to 10 Default: 6
Free Window Factor	The probability that the RRM will include a free window in its poll, during which any terminal may transmit. Values: 0 to 7 Default: 0
Message Mode Limit	The probability of including a message-mode poll in its poll transmission. Values: 0 to 7 Default: 4
Callsign Period	The amount of time between transmissions of the call sign. This parameter is in minutes. A value of 0 (zero) indicates that no call sign is transmitted. Values: 0 to 60 Default: 0
Callsign String or Callsign Text	The text to be transmitted as the call sign of the RRM. The text is transmitted as Morse code. Default: Teklogix

14.2.3 Radio Parameters

This group of parameters sets radio parameters on the devices that make up the RRM group. These are parameters that should be set identically on all the devices. They are configured once on the Communications Servers; the Communications Server then downloads them to the RRMs in the group.

Warning: ***THE RADIO PARAMETERS ARE PRE-CONFIGURED FOR YOUR SYSTEM, AND SHOULD NOT BE CHANGED without a proper understanding of how it affects the radio link!***

Field	Description
Sync Delay	The number of delay characters inserted between the RRM transmission and the first response window. Values: 3 to 45 Default: 28

Field	Description
Remote Txon	The number of fill characters sent by the devices to their radios before the devices send message data. Values: 3 to 60 Default: 13
Active Channel	The radio channel used by all the RRMs in the RRM group. Values: 1 to 20 Default: 1

14.2.4 Group Parameters

These list the individual RRMs in each subgroup.

If the coverage areas of two or more of the RRMs in this RRM group do not overlap, the non-overlapping RRMs may be assigned to the same subgroup. They then poll at the same time. This improves system response time and reduces the amount of signalling on the network.

As an example, if the RRM group has 3 RRMs, and RRMs 1 and 3 do not overlap, RRMs 1 and 3 may be placed in one subgroup. They then poll simultaneously. RRM 2 may be placed in another subgroup. Polling then alternates between the two subgroups.

To configure a subgroup, place the numbers of the RRMs in the text box for that subgroup. For instance, **13** in the text box for subgroup 1 places RRMs 1 and 3 in that subgroup. The number for each RRM is displayed beside its name on the RRM Group Menu.

RRMs, that are not assigned to subgroups, poll individually, after all of the RRMs in the subgroups poll.

Field	Description
Group 1	The numbers of the RRMs in subgroup 1. Default: None.
Group 2	The numbers of the RRMs in subgroup 2. Default: None.

14.3 RRMs Screen: Configure RRM Screen

This screen defines a named RRM. It is called from the *RRM Group Menu*. On the *RRM Group Menu* the RRM number for each RRM is displayed beside its name.

Field	Description
Name	The name of the RRM. Default: Unnamed RRM
IP Address	The IP address and port number of the RRM. The IP address is any valid IP address; the port number can range from 1024 to 32767. The base station must be in RRM mode, and must have the same port number configured. It listens on this port for incoming data from the Communications Server, which includes the Communications Server IP address. Default: 0.0.0.0: 16132

14.4 Analyze Screen: Analyze RRM Group Screen

This screen displays the configured parameters for the selected RRM group on this Communications Server. It also displays errors and warnings about things that could potentially cause problems on the network.

This screen is opened by selecting **Analyze** on the *RRM Group Menu* screen

14.4.1 General Parameters

Field	Description
Name	The name of the RRM group.
Radio-Link Protocol	The protocol used by the RRM group named in Name.

14.4.2 Polling Protocol Parameters

This section lists the settings for the polling protocol parameters.

Field	Description
Number of Poll Windows	The setting of Number of Poll Windows on page 123.
Size of Poll Windows	The setting of Size of Poll Windows on page 123.
Maximum Message Segment Size	The setting of Maximum Message Segment Size on page 124.
Free Window Factor	The setting of Free Window Factor on page 124.
Message Mode Limit	The setting of Message Mode Limit on page 124.

14.4.3 Radio Parameters

This section lists the settings for the radios in the RRM group.

Field	Description
Sync Delay	Displays the setting of Sync Delay on page 124.
Remote Txon	Displays he setting of Sync Delay on page 124.
Baud Rate	The baud rate for the radios in this RRM group. Two-level modulation supports baud rates of 4800, and 9600, bits per second. Four-level modulation supports bit rates of 9600, and 19,200, bits per second. The analyzer constrains the available baud rates to those supported by the selected modulation. Values: 4800, 9600, 19200 Default: 9600
Modulation	The type of narrow-band FM modulation used by the radios in this RRM group. All radios in the group must use the same modulation. Available modulations are *two-level* and *four-level*. Not all radios support all modulations; in particular, older radios only support the two-level modulation. Values: 2-level, 4-level Default: 2-level
RRM Radios	Displays the type of radio installed in the RRMs.
Terminal Radios	The type of radio installed in the devices with which the RRMs communicate. Values: mixed, TRX7370 only Default: mixed

14.4.4 Group Parameters

This section lists which RRMs belong in each RRM group.

Field	Description
Combination 1	Displays the setting of Group 1 on page 125.
Combination 2	Displays the setting of Group 2 on page 125.

14.4.5 Results

This section lists the results of the analysis.

Field	Description
Errors	A list of problems which will cause this RRM-group configuration to not work.
Warnings	A lists of less serious problems than those in the *Errors* list. This RRM-group configuration will work, but it will not be optimal.
Number of RRMs	The number of RRMs in this group
RRM Combination Cycle	The order that the RRMs in this group are polled. See Section 14.2.4 Group Parameters on page 125 for details.
Poll Timeout in Terminals (average load)	The same Poll Timeout must be configured on all mobile devices using this RRM group. This value is a suggested setting for an averagely loaded network.
Poll Timeout in Terminals (maximum load)	The same Poll Timeout must be configured on all mobile devices using this RRM group. This value is a suggested setting for a heavily loaded network.

15 RADIO LINK FEATURES CONFIGURATION

15.1 Cellular Switching and Timeplexing 131
15.2 Radio Link Features Screen 131
15.2.1 General Options 131
15.2.2 Automatic Terminal Number Assignment 132

15.1 Cellular Switching and Timeplexing

In Psion proprietary systems, there are two methods of operating on a narrow band radio link. The first method is cellular switching. Here, each base station uses a different radio channel. The devices monitor the radio link and automatically switch to the channel with best radio reception. This cellular switching capability is transparent to both the host and the device.

The second method is timeplexing. Here, a group of base stations at a site use the same radio channel. The Communications Server controls the polling sequence so that the base stations do not transmit simultaneously. This timeplexing capability is also transparent to both the host and the device.

Cellular switching and timeplexing can be combined within one Psion system. A site may operate on two or more channels, with several timeplexed base stations using each channel, and cellular switching between the channels.

In all of these cases, the device may move freely throughout the site without loss of communication. The Psion system handles channel-switching and the handover between base stations.

15.2 Radio Link Features Screen

15.2.1 General Options

Field	Description
Operate in Cellular Mode	When selected, the base stations connected to this Communications Server operate in cellular mode, enabling devices to move between base stations, switching channels if necessary. Default: Selected.
Poll ID	The poll ID is a unique number for this Communications Server. It is used in the poll header to identify the Communications Server when it polls devices. This is useful in systems with more than one Communications Server. Values: 0 to 255 Default: 35
Polling Protocol Terminal Timeout	The time (in minutes) that a device is allowed to be offline before the Communications Server removes it from the system. When the device resumes activity, it sends a *warm initialization* message to the Communications Server to re-establish communication. This parameter is used with Percent Polling Protocol Terminal Timeout; it is used in narrow band systems. Values: 0 to 240 Default: 60
Percent Polling Protocol Terminal Timeout	The time that a device is allowed to be inactive before the Communications Server declares it offline. This time is expressed as a percentage of the Polling Protocol Terminal Timeout. Thus, if the Timeout parameter is 60 and this parameter is 75, the Communications Server declares a device offline after 45 minutes of inactivity (45 minutes is 75 percent of 60 minutes). An offline device is still considered part of the Psion system; messages to it are queued at the Communications Server. In this example, the device remains offline until it notifies the Communications Server that it is online, or until the Communications Server removes it from the system entirely, after 60 minutes of inactivity. This parameter is used in narrow band systems. Values: 50 to 90 Default: 75
Direct TCP Connections for TekTerm	When selected, the Communications Server opens a listening socket on port 9999 so that TekTerm can connect. This must be enabled when redundancy is enabled. Default: Selected.

Field	Description
Direct TCP Check Duplicate Terminal Number	When selected, the Communication Server checks for duplicate terminal numbers among those devices connecting by Direct TCP. This is only needed if you are manually assigning terminal IDs. It is not needed if you are using automatic terminal number assignment. For more information see Section 15.2.2 Automatic Terminal Number Assignment on page 132. Default: Selected.
Expiration period (in days) for Automatic Radio Address and Terminal Number	The amount of time before automatically-assigned radio addresses, and terminal numbers, expire. Values: 1 to 365 Default: 2
Automatic Radio Address assignment range	The lower and upper allowed values of radio addresses that are assigned automatically to narrow band or 802.IQ devices. This is often enabled when Remote Sockets is used. Values (lower, upper): 0 to 3840. For S900L, SW9500L, and SW9510L range must be 1 to 50. Default (lower, upper): 1024, 2048 A range of 0 to 0 signifies that this feature is disabled. Do not configure a range starting with zero and ending with a number greater than zero.

15.2.2 Automatic Terminal Number Assignment

Terminal numbers can be assigned automatically to up to five groups of devices. These groups are listed in this section, starting with Group 1, the default group. Each group has the following parameters:

Field	Description
Range	The lower and upper values of terminal numbers that are assigned automatically to devices in the group. Values (lower, upper): 0 to 3840, 0 to 3840. For S900L, SW9500L, and SW9510L the maximum range must be 1 to 50. Default (lower, upper): 0, 0 A range of 0 to 0 signifies that this feature is disabled. Do not configure a range starting with zero and ending with a number greater than zero.
Comment	An optional note about the terminal group.

Terminal Number Assignment when using Remote Sockets

Each Remote Sockets connection made across the radio network requires one terminal number. Programs using the Remote Sockets emulation can request a maximum of 15 terminal numbers for each device. The device may require additional terminal numbers for other purposes.

16 802.IQ V1 AND V2 FEATURES CONFIGURATION

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16.2 802.IQ version 1 and version 2 Configuration Screen 135
16.2.1 802.IQ v1/v2 Common Features 135
16.2.2 Available Interfaces 135
16.2.3 802.IQ v1 Features 135
16.2.4 802.IQ v2 Features 136

16.1 802.IQ Protocol

802.IQ is a Psion proprietary protocol optimized to operate on a wireless LAN. 802.IQ protocol is available in two versions: 802.IQv1 and 802.IQv2. Each mobile device must use only one of these protocols.

802.IQv1 is an efficient proprietary non-TCP/IP over-the-air protocol that eliminates the need for a TCP/IP stack on a device. Psion base stations, fitted with 802.11 radios, convert it to the protocols of the wired network.

802.IQv2 protocol is an enhanced version of the 802.IQv1 protocol that transports packets over the UDP layer. It provides all 802.IQv1 capabilities. It also allows the mobile device to use a TCP/IP stack, and communicate with the Communications Server through any third-party 802.11 access point.

16.2 802.IQ version 1 and version 2 Configuration Screen

16.2.1 802.IQ v1/v2 Common Features

Field	Description
Auto Startup	When selected, this parameter enables the Psion 802.IQ protocol (v1 or v2) to start automatically when the Communications Server is rebooted. Default: Selected.
Terminal Offline Timeout	The time (in minutes) before the Communications Server declares an 802.IQ terminal offline. Values: 1 to 240 Default: 5
Beacon Period	The duration (in seconds) of a beacon. Values: 1 to 20 Default: 2

16.2.2 Available Interfaces

This section of the screen displays the network interfaces that are available to the Communications Server.

16.2.3 802.IQ v1 Features

Field	Description
Enabled	When Selected, 802.IQ v1. is enabled. Default: Not selected.
Beacon Gateway Interface	The physical network interface through which the Communications Server sends 802.IQ v1 beacon packets. The Communications Server may have up to two Ethernet interfaces. The interface is identified by its index number. Values: **[***index***] Ethernet** Default: [0] Ethernet
Protocol Type ID	The protocol type ID with which the Communications Server labels 802.IQ v1 beacon packets. This ID number must be the same as the value configured in OTT on the Psion mobile devices. Values: 1501 to 65535 Default: 2476

16.2.4 802.IQ v2 Features

Field	Description
Enabled	When selected, 802.IQ v2 is enabled. Default: Not selected.
Beacon UDP port	The port number through which the Communications Server sends beacon packets. This port number must be the same as the value configured in OTT on the Psion mobile devices. An 802.IQ v2 beacon is a broadcast sent out to all 802.IQ v2-enabled terminals. It allows the 802.IQ v2 terminals to detect the Communications Server and obtain the IP address of the Communications Server. This enables a device to determine whether the Communications Server was rebooted, and if so, how to recover. Values: 5001 to 65535 Default: 8888
Beacon Gateway Interface	The physical network interface through which the Communications Server sends 802.IQ v2 beacon packets. The Communications Server may have up to two Ethernet interfaces. The interface is identified by its index number and IP address. Values: **[***index***] Ethernet** Default: [0] Ethernet

17 REDUNDANCY CONFIGURATION

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17.2 Redundancy Parameters Screen 140
17.2.1 General Redundancy Options 140
17.2.2 Available interfaces 140

17.1 Overview

This feature enables two similarly-configured Communications Servers to operate in parallel. One Communications Server is active. It is the primary Communications Server, and it manages communication to the rest of the Psion system. The other Communications Server is the secondary Communications Server, and it remains idle. Both Communications Servers communicate with an arbiter; another node which serves as a reference on the network. There can only be one secondary Communications Server.

Both Communications Servers must be connected to the network, and each Communications Server is aware of the IP address of the other. The secondary Communications Server polls the primary Communications Server, and the primary Communications Server responds. They exchange information about their status.

If the secondary Communications Server cannot communicate with the primary Communications Server but can communicate with the arbiter, it assumes that the primary Communications Server is not working. It becomes the primary Communications Server, and it assumes control of the Psion system.

When the original primary Communications Server comes online again, it assumes secondary status; the second Communications Server continues as the primary.

If the Communications Servers cannot communicate with the arbiter, they assume that the network is not working.

Note: When control of the system is passed from one Communications Server to the other Communications Server, sessions between hosts and terminals are closed, and terminals and bases are reset.

Both Communications Servers must be configured identically, with the exception of their own IP addresses, and the Backup IP Address parameter (the address of the other Communications Server).

Important: The** TCP Direct Connections for TekTerm **parameter, on the** Radio Link Features **screen, must be enabled for redundancy to work. See** **Section 15.2 Radio Link Features Screen on page 131*.***

Polling by the Secondary Communications Server

The secondary Communications Server polls the primary Communications Server at intervals specified by Poll Interval (s).

After each poll, this Communications Server waits for a reply. It waits for a time specified by Poll Timeout (s). If there is no reply during this interval, the Communications Server sends another poll to the other Communications Server.

The total number of polls sent while this Communications Server waits for the other Communications Server to respond is specified by Poll Tries.

If no response is received to any of the polls, this Communications Server then pings the arbiter. If the Communications Server receives a reply to the ping from the arbiter, but cannot contact the other Communications Server, it assumes that the other Communications Server is off the network, becomes the primary, and takes control of the Psion system.

If this Communications Server cannot reach the other Communications Server or the arbiter, it assumes that the network is not working, and remains in secondary mode.

17.2 Redundancy Parameters Screen

17.2.1 General Redundancy Options

Field	Description
Enabled	When selected, the Communications Server uses the redundancy feature. A second Communications Server (appropriately configured) and an arbiter must be present on the network for the feature to operate properly. Default: Not selected
Preferred Primary	When selected this Communications Server is the preferred primary Communications Server. There can only be one preferred primary. Default: Selected.
Poll Interval (s)	The poll interval when this Communications Server is the secondary Communications Server. Values: 1 to 10000 Default: 10
Poll Timeout (s)	The poll timeout when this Communications Server is the secondary Communications Server. Values: 1 to 10000 Default: 2
Poll Tries	The number of poll retries when this Communications Server is the secondary Communications Server. Values: 2 to 99 Default: 3

17.2.2 Available interfaces

At the top of this section of the screen is a list of network adapters detected by the Communications Server software.

Field	Description
Backup IP Address	The address of the other Communications Server. Values: Any valid IP address. Default: 76.128.0.2
Alias Network Mask	The network mask for the alias IP address of the primary and secondary Communications Servers. This network mask must be the same on both Communications Servers. Values: Any valid IP network mask. Default: 255.255.0.0
Alias Interface	The interface number through which this Communications Server communicates with the other Communications Server. Values: Selected from the list of network adapters, detected by the Communications Server. Default: [0] Ethernet

Field	Description
Alias IP Address	The alias IP address for this Communications Server and the other Communications Server in the redundancy system. This address must be the same on both the primary and secondary Communications Servers. Devices on the network may have more than one IP address corresponding to their network interface (and hardware address). The primary Communications Server presents the alias address to the network as well as its own unique IP address. The secondary Communications Server only presents its own unique IP address to the network. When the secondary Communications Server becomes the primary, it starts to use the alias IP address. The old primary Communications Server, which becomes the secondary, stops using the alias IP address. Devices on the network which communicate directly with the Psion network Communications Server IP address, such as devices using Direct TCP, may communicate with the alias IP address. They will then communicate with whichever of the two redundant Communications Servers is the primary. Values: Any valid IP address. Default: 0.0.0.0 **Note:** Direct TCP Connections for TekTerm must be selected. See Section 15.2.1 General Options on page 131, on *Radio Link Features* screen for more information.
Arbiter 1 IP Address	The address of a device on the network which is known to be reliable. Both Communications Servers ping this device. If they receive no reply from both this device and the Arbiter 2 device, they assume that the network is not operating. This address should be the same on both the primary and secondary Communications Servers. Values: Any valid IP address. Default: 127.0.0.1
Arbiter 2 IP Address	Optional. The address of a device on the network which is known to be reliable. Both Communications Servers ping this device. If they receive no reply from both this device and the Arbiter 1 device, they assume that the network is not operating. This address should be the same on both the primary and secondary Communications Servers. Values: Any valid IP address. Default: 0.0.0.0

18 SNA PROTOCOL CONFIGURATION

18.1 SNA Protocol Configuration: SNA Parameters Screen 145

18.1 SNA Protocol Configuration: SNA Parameters Screen

This screen is used to set the SNA operation of the Communications Server.

Field	Description
Network Name	The name of the SNA network to which the host and the Communications Server are connected. The network name is a maximum of eight alphanumeric ASCII characters, beginning with a letter. If it is less than eight characters, it is padded to the right with spaces. Default: APPN

19 SYSTEM CONFIGURATION

19.1 User Screen 149
19.2 SNMP Parameters Screen 149
19.3 Miscellaneous Options Screen 149

19.1 User Screen

This screen defines the username and password for anyone who can log in to this Communications Server.

Field	Description
Name	A username that can be used to log into this Communications Server. Values: An ASCII string. Default: **user**
Password	The password that corresponds to the username. This password is case sensitive. Values: ASCII string, up to 32 characters long. Default: **123456**

19.2 SNMP Parameters Screen

This screen is used to set an option for the Communications Server SNMP operation. Most of the SNMP options in the Communications Server are set through the operating system software.

Field	Description
Proxy throttling for non-IP terminals	Enables throttling for SNMP queries and responses crossing Psion proprietary radio networks. Since these networks often use narrow band FM transmissions, their maximum data rates may not be as high as those of 802.11 networks. Some SNMP queries may result in large amounts of data crossing the RF networks. The Proxy Throttling parameter limits the rate at which such data may be sent, to prevent saturation of the RF network. Values: Disabled, 100 byte/s, 500byte/s, 1000 byte/s Default: Disabled

19.3 Miscellaneous Options Screen

This screen contains settings for the Communications Server serial number, and the maximum number of terminals allowed to connect to it.

Field	Description
Serial Number	The serial number for this Communications Server. Default: 0
Enable Telnet User Authentication	When selected, the Communications Server requests a username and password from Telnet sessions connecting to the Communications Server debug console. The user names and passwords are those specified in Name and Password in Section 19.1 User Screen. Default: Disabled.

20 MISCELLANEOUS COMMANDS CONFIGURATION

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20.1 Display Entire Database Contents: Database Validation Results Screen

Click **Show All** to display the contents of the Communications Server configuration database. This is the permanent database from which the Communications Server is booted. Changes made to the configuration database are stored in a configuration cache, which must be saved before the Communications Server can use the changes.

20.2 Export/Import Configuration: Configuration Database Import/Export Menu

Export Database to a File

Clicking **Export** displays the *Export Configuration Database* screen. Specify the name of the backup file and then click **Export Configuration**.

Import Database From a File

Clicking **Import** displays the *Import Configuration Database From File* screen. Specify the name and the path of the backup file to be imported.

Important: The newly imported configuration must be validated and committed before it can become the active configuration.

20.3 Restart Communications Server Software

Click **Restart** to restart the Communications Server software.

20.4 Validate and Save Current Configuration

Clicking **Validate** displays the *Validate and Save Configuration* screen.

Validate Configuration

When **Validate Configuration** is clicked, the Communications Server checks the configuration database cache for errors, then displays the Database Validation Results screen, which lists configuration errors.

If **Update PComm** is selected, when **Validate Configuration** is clicked the existing device definitions are erased and re-created from scratch using the current configuration settings for all SNA hosts. This allows changes to the terminal range and LU name of the SNA host configurations to be implemented.

Validate and Commit

When **Validate and Commit** is clicked, the validate operation is immediately followed by a commit; there is no option to undo.

21 SETTING TERMINAL NUMBERS ON THE GENERAL HOST OPTIONS SCREEN

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21.1 Introduction

The terminal range settings on the *Host General Options* screens define the terminals which are associated with each host session.

The *Host General Options* screen maps sessions on the host to terminal numbers on the Communications Server. A range of *n* terminals in the *Host General Options* matches the lower number in the range to the first session defined on this host and the higher number in the range to the nth session defined on this host.

When the *Terminal Range* starts at 1, the host session number is identical to the Communications Server terminal number—the offset is zero.

When the *Terminal Range* starts with a number other than 1, an offset is created (equal to the lower number minus 1). For instance, the range **10 to 20** implies an offset of 9. This means that the first session on the host is Communications Server terminal 10.

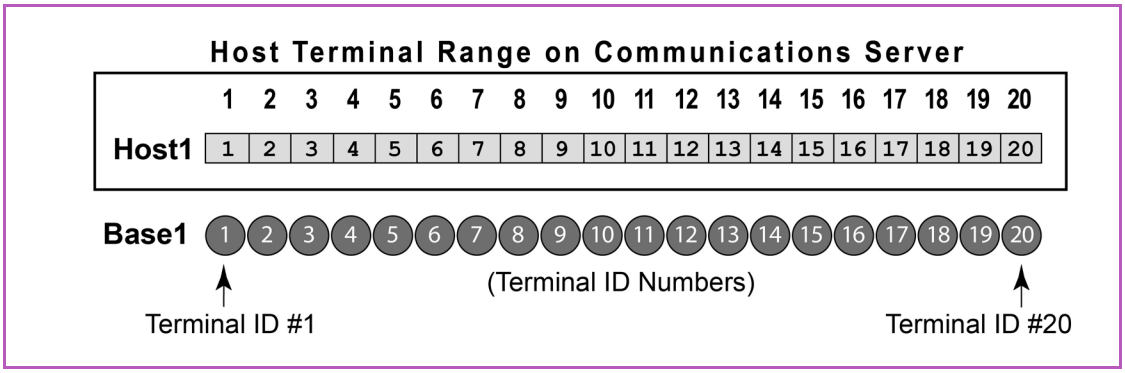
The numbering scheme described in this section works for all host types; however, some host applications ignore the mapping.

Telnet connections may, or may not, have sessions directly associated with client terminal IDs. There are some cases where 5250, or 3274, host sessions are directly related to a terminal ID, such as when device naming is used.

The examples in this section demonstrate the effect of such offsets.

21.2 Systems with One Host

If the Communications Server is configured for one host (named **Host1**), with one base (named **Base 1**), and 20 terminals; the host session numbers are identical to the Communications Server terminal numbers.



Settings are as follows:

In the Host *General Options* for **Host1**:

Terminal Range = 1 to 20

In the Base Station *General Options* for **Base1**:

First Terminal = 1

21.3 Systems with Multiple Hosts

Terminal number mapping is useful when the Communications Server is configured for multiple hosts, and there is a need to differentiate between terminals that communicate with one host and those that communicate with another.

The ranges defined for the hosts can either *overlap* or be *mutually exclusive*.

21.3.1 Two Hosts with No Overlapping Terminal Numbers

Figure 21.1 Host1

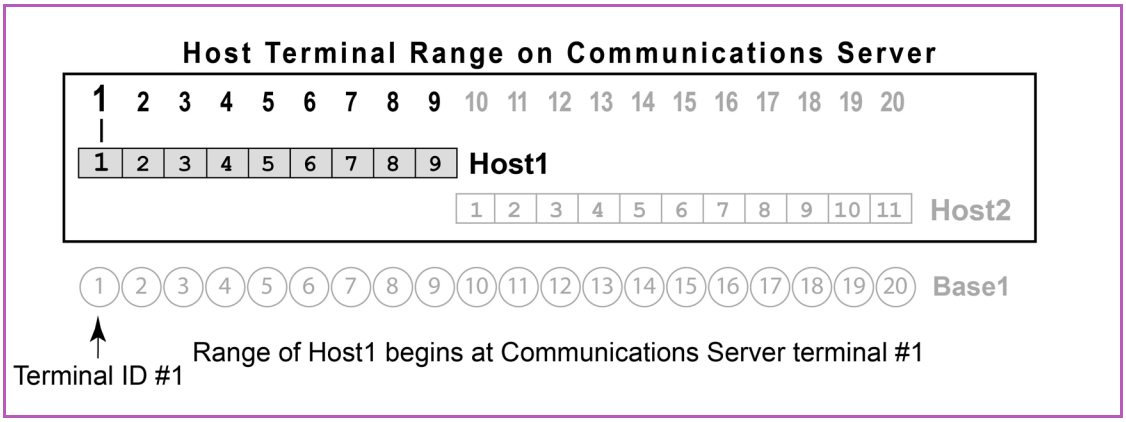
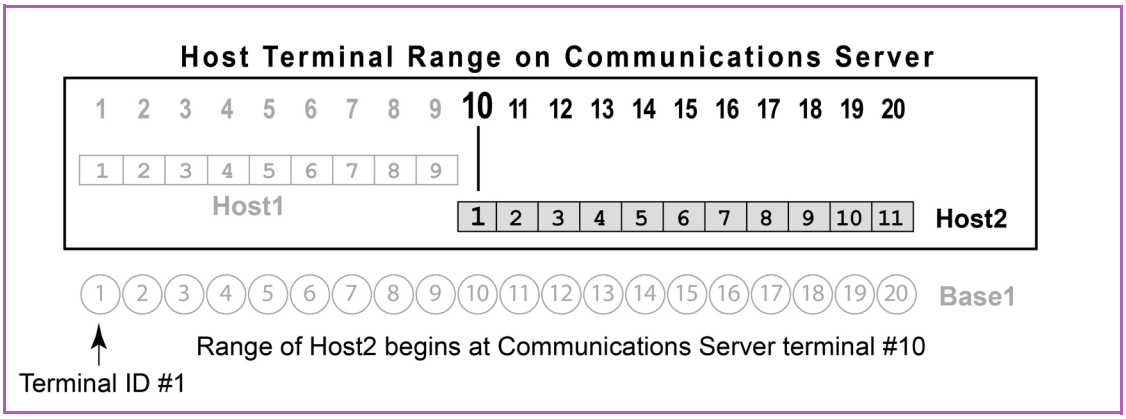

Host Terminal Range on Communications Server
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
1 2 3 4 5 6 7 8 9
Host1
1 2 3 4 5 6 7 8 9 10 11
Host2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Base1
Terminal ID #1
Range of Host1 begins at Communications Server terminal #1

Figure 21.2 Host2


Host Terminal Range on Communications Server
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
1 2 3 4 5 6 7 8 9
Host1
1 2 3 4 5 6 7 8 9 10 11
Host2
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Base1
Terminal ID #1
Range of Host2 begins at Communications Server terminal #10

Settings are as follows:

In the Host *General Options* for **Host1**:

Terminal Range = 1 to 9

In the Host *General Options* for **Host2**:

Terminal Range = 10 to 20

In the Base Station *General Options* for **Base1**:

First Terminal = 1

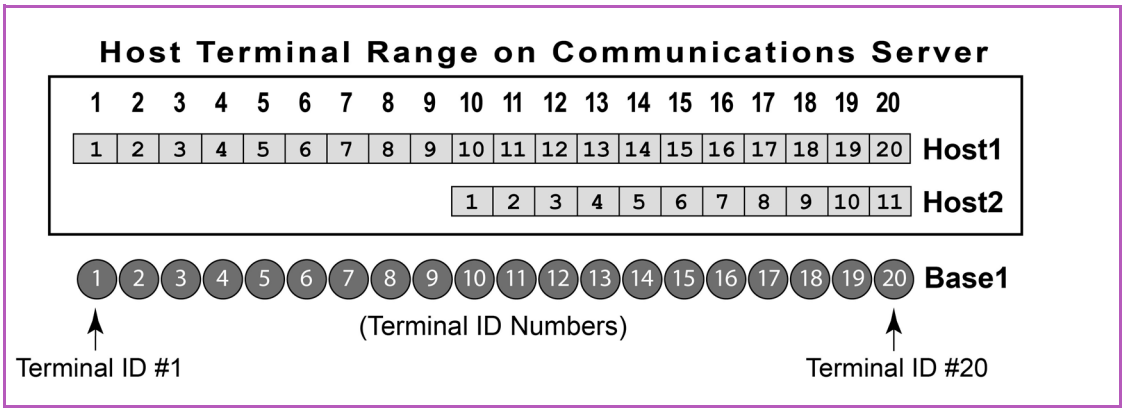
In this example, no physical terminals fall within the ranges of both **Host1** and **Host2.** Thus, no terminal can communicate with both hosts.

Terminals 1 to 9: Communicate with **Host1**. Terminal 1 is mapped to **Host1** session 1. Terminal 9 is mapped to **Host1** session 9.

Terminals 10 to 20: Communicate with **Host2**. Terminal 10 is mapped to **Host2** session 1. Terminal 20 is mapped to **Host2** session 11. As an example, Terminal 13 is the **Host2** session 4.

21.3.2 Two Hosts with Overlap in Terminal Numbers

Important: You cannot overlap an ANSI host with another ANSI host or any other type of host.


Host Terminal Range on Communications Server
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Host1
Host2
Base1
(Terminal ID Numbers)
Terminal ID #1
Terminal ID #20

Settings are as follows:

In the Host *General Options* for **Host1**:

Terminal Range = 1 to 20

In the Host *General Options* for **Host2**:

Terminal Range = 10 to 20

In the Base Station *General Options* for **Base 1**:

First Terminal = 1

Terminals 1 to 9: Communicate with **Host1** only.

Terminals 10 to 20: Can communicate with **Host1** and **Host2**. Terminal 10 is mapped to **Host2** session 1. Terminal 20 is mapped to **Host2** session 11. When the terminals connect with the Communications Server, they are given the choice of hosts with which to communicate. For instance, terminal 13 corresponds to session 13 on **Host1** and to session 4 on **Host2** and is given that choice of hosts.

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